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EXECUTIVE SUMMARY & INDUSTRY OVERVIEW
NUEXCO REPORT 160

Exchange Value Steady at $23.50

The **Exchange Value** remained at $23.50 per pound U_3O_8 for the fifth consecutive month. However, the current price level is significantly firmer than it was three to four months ago. While sellers actively competed for sales opportunities, they were generally unwilling to undercut Exchange Value to increase their prospects for making a sale.

Near Term Supply and Demand Firming

As indicated in the *Market Opportunities* section, the total of material available for sale in the near term is about 7.1 million pounds U_3O_8. The total of demand in the same time frame is about three million pounds U_3O_8. This firming of supply and demand, coupled with the lowering of interest rates, is relieving some of the pressure felt by utility inventory sellers.

Transaction Value $24.10, Unchanged

The **Transaction Value** remained at $24.10 per pound U_3O_8 for the second consecutive month. One transaction, a near term sale between two US producers, is reported this month.

Conversion Value Increases to $1.20, Up Ten Cents

The **Conversion Value** rose ten cents to $1.20 per pound U as UF_6. While available supply of secondary market conversion services outweighs demand by more than 13 to one in the near term, both buyers and sellers have indicated a willingness to discuss sales at this higher price level. There are no transactions of secondary market conversion services reported this month.

Seamen's Union Ban Ordered Halted

In Australia, Mary Kathleen Uranium Ltd. won an injunction against the Seamen's Union which will legally prevent the union from enforcing its ban on uranium shipments.

Framatome Becomes A Partnership

France's nuclear reactor manufacturer will become a three-way partnership with its two largest shareholders. The French government did not approve the Framatome merger with Creusot Loire.

US Uranium Inventory of 312 Million Pounds

Total US inventory consisted of 312 million pounds U_3O_8 equivalent as of January 1, 1981. The US inventory position is broken down by ownership and by material form and is analyzed in this month's Report.

Impact of US Reactor Cancellations Discussed

From June 1979 to June 1981, 23 reactors comprising some 25,000 MWe were cancelled in the US. The *Essay* discusses the resulting reduction of cumulative demand for uranium and also estimates the probable future cancellations and their effect on demand.

Dilemmas of Nuclear Power Presented; Key Lake Geology Focus

A slightly edited version of a recent speech by J. Robert Wolcott (President of Nuexco) is presented in the *Commentary* section.

The *Raw Materials* essay continues the two previous months' discussion of Canada's Key Lake Project with the emphasis on the uranium mineralizing process.

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JANUARY 1982 NUMBER 161

Monthly Report on the Uranium Market

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MONTHLY REPORT ON THE URANIUM MARKET

January 1982 No. 161

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URANIUM MARKET

PRICING

December 1981

The **Exchange Value** as of December 31, 1981 is $23.50 per pound U_3O_8, unchanged from the five previous months. The price firming trend noted in last month's Report continued during the early part of December, but new weakness developed towards month end and precluded any increase in Exchange Value.

December has historically been marked by unusual levels of market activity as buyers and sellers conclude year end transactions, primarily motivated by financial considerations. Six of the nine uranium sales reported this month are in this category.

Near the end of December, several new lots of material became available for 1982 delivery at prices which are suggestive more of price stability than price strengthening. Also, several deals involving a total of nearly two million pounds U_3O_8 are under discussion at similar price levels. These two factors combined to prevent Exchange Value from rising.

While an upturn in prices is anticipated by a number of buyers and sellers, substantial utility inventories and uncommitted incremental production continue to overhang the spot and near-term markets. Until these quantities are cleared or withdrawn, their presence will impede any sustained upward price movement.

The **Transaction Value** decreased ten cents to $24.00. This month's Transaction Value includes eighteen transactions totaling 2.5 million pounds U_3O_8 covering four months. The **Loan Use Charge Rate** remained at six percent.

The **Conversion Value** remained at $1.20 per pound U as UF_6. After a period of considerable activity earlier in 1981, the secondary conversion market has been relatively quiet in recent months. Sellers continue to outnumber buyers; currently only two or three buyers are considering purchases.

1981 In Review

The uranium market experienced relatively stable prices in 1981. Exchange Value was constant at $25.00 during the first five months of the year, and for five consecutive months in the second half the Exchange Value was $23.50 per pound, as seen in Table 1.

Two significant buyer and seller groups were active during 1981:

1. Utility sellers offered large amounts of inventory;
2. Producer buyers were responsible for much of the increased demand of 1981.

In early 1981, the amount of material offered for sale in the spot and near term market was on the order of nine to ten times the amount of inquiries to purchase. However, this ratio fell steadily during the middle of the year and since August has held at about two to one, due mainly to two factors: (1) Beginning in March, the strong downward pressure of material for sale by holders of inventory was mitigated somewhat by the large

Table 1
1981 EXCHANGE VALUES AND CONVERSION VALUES

Effective as of the Last Day of the Month Indicated	Report	Exchange Value (per pound U_3O_8)	Conversion Value (per pound U_3O_8)
January	150	$25.00	$1.20
February	151	$25.00	$1.20
March	152	$25.00	$1.20
April	153	$25.00	$1.40
May	154	$25.00	$1.15
June	155	$24.25	$1.15
July	156	$23.50	$1.15
August	157	$23.50	$1.10
September	158	$23.50	$1.10
October	159	$23.50	$1.10
November	160	$23.50	$1.20
December	161	$23.50	$1.20

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quantities of material sought under producer inquiries to purchase. These producers, contemplating shutdowns of high cost production facilities, entered the market for low priced material to fulfill existing contracts. (2) In addition, what were perceived as bargain prices stimulated some users to enter the market with demand for near term deliveries.

The large amount of inventory selling by user entities during 1981 continued the downward pressure on the market price observed during 1980. Throughout the second half of this year, the quantity of material offered for sale by holders of inventory averaged about the same level or somewhat higher than material offered for sale by producers. From July on, offers from inventory holders continually ran between 3.5 and five million pounds U_3O_8. Table 2 chronicles the 1981 near term supply and demand figures published by Nuexco, including the percentage of material offered by inventory sellers.

Increased buyer interest by both users and producers was the principal firming mechanism in the spot market price during 1981. In August, inquiries to purchase jumped to about four million pounds U_3O_8 compared to an average of 1.5 million pounds U_3O_8 over prior months. The percentage of inquiries to purchase by other than primary users increased from zero to 69 percent between March and April, as shown in Table 2, and comprised a fairly large percentage of the total over the last several months. Most of the inquiries were made by US producers. Even more significant, however, was the amount of material sought by non-primary users during the latter part of 1981. This amount averaged about two million pounds U_3O_8.

The relative stability of the 1981 market is evident by comparing the 1980 and 1981 trends of the Exchange Value and Transaction Value. In 1980, the Exchange Value dropped about $13.00 during the course of the year, and the Transaction Value dropped over $14.00. Exchange Value during 1981 dropped $3.50 from the December 1980 value of $27.00; Transaction Value dropped $3.70 from the December 1980 level of $27.70.

The drop in Exchange Value during mid-year 1981 was preceded by the offering of small amounts of material, and some sales, during March and April at prices lower than the then current Exchange Values. Although that development indicated a weakening of the spot and near term markets, the amount of material which changed hands at the lower price level was

Table 2

1981 SPOT AND NEAR TERM SUPPLY AND DEMAND
(As reported by Nuexco)

Spot and Near Term Inquiries
(thousands of pounds U_3O_8)

Nuexco Report Number	To Sell	Percent Inventory Holders	To Purchase	Percent Non-Primary User	Ratio of Supply To Demand	Exchange Value (per pound U_3O_8)
150	8,200	38	710	0	12:1	$25.00
151	8,510	42	900	0	9:1	$25.00
152	8,280	36	2,115	69	4:1	$25.00
153	7,060	46	1,550	65	5:1	$25.00
154	7,700	51	1,750	57	4:1	$25.00
155	5,200	49	1,000	100	5:1	$24.25
156	5,360	52	1,400	18	4:1	$23.50
157	7,210	55	3,970	37	2:1	$23.50
158	7,420	53	4,075	59	2:1	$23.50
159	7,980	56	4,345	66	2:1	$23.50
160	7,110	63	3,070	56	2:1	$23.50
161	8,845	57	4,250	33	2:1	$23.50

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"commercially insignificant" because of transactions for much larger quantities at higher prices. Nevertheless, the emergence of offers and sales at lower prices had set the stage for the month of June in which "transactions of sizable blocks of U_3O_8" at prices less than the then Exchange Value led to the year's first drop in the level of Exchange Value. The weakening of Exchange Value was also due to sellers agressively discounting prices of U_3O_8 in order to increase their chances of making a sale. As a few buyers successively entered the market, they attracted considerable competition among sellers, putting more pressure on prices.

Table 3

AVERAGE INDIVIDUAL QUANTITIES OF INQUIRIES TO SELL AND TO PURCHASE BY MONTH, PUBLISHED BY NUEXCO DURING 1981

Nuexco Report Number	Spot and Near Term Supply (thousands of pounds U_3O_8)	Spot and Near Term Demand
150	550	180
151	610	230
152	550	420
153	470	520
154	510	440
155	400	1,000
156	360	280
157	420	440
158	410	510
159	460	400
160	370	440
161	442	425

The year 1981 was also marked by erratic entrances and exits of major blocks of U_3O_8. This occurred with producer buyers entering the market along with utility sellers. The large average individual quantities of purchase and sale inquiries are seen in Table 3. Towards the end of 1981, this condition was expressed by the term "unstable equilibrium" and the following explanation: "With so many inventory holders actively trying to sell, it is possible that several will become aggressive at the same time and combine to drive prices down. At the same time, decisions by several producers to lock up near-term supply, as an alternative to producing material themselves to deliver under supply contracts, could firm up prices." The market entering 1982 will continue to act under these forces.

The "unstable equilibrium" of the present market could be altered if the opposing forces of supply and demand shift somewhat during 1982. If utilities anticipating unfilled requirements in the mid-1980s decide to enter the market in 1982 to meet them, some strengthening of the intermediate and long term markets could occur. More than a dozen utilities fall into that category. On the other hand, many national buying organizations are considering whether to reduce their stockpiles. If several large blocks of material entered the market simultaneously, prices could be driven down sharply. The effects of these two opposing market forces on near term market prices are difficult to predict, both in magnitude and timing.

During 1981, a strong secondary market for conversion services emerged. As inventories mounted and carrying costs grew, utilities made the decision to sell inventory only to encounter a market in which U_3O_8 was the form of material most in demand. Because their inventories were largely in the form of UF_6, the utilities sought ways to substitute U_3O_8 for UF_6 so they could respond competitively to inquiries to buy U_3O_8. Certain of these utilities were willing to offer future contracted conversion services or the conversion component of their UF_6 for sale at a price significantly below that of the primary market. Hence, the term "secondary market."

A utility wishing to "deconvert" its material would often exchange UF_6 for an equivalent quantity of concentrates, plus cash or additional concentrates as payment for the conversion services. A utility wishing to sell excess conversion services also has the option to assign a future conversion contract, partially or completely, to another utility. The mechanisms of the various conversion transactions were detailed in Nuexco Report Number 150.

The secondary market for conversion services during 1981 exhibited strong demand in the long term and strong supply in the near term. Those utilities who wished to take advantage of the low cost of conversion services in the secondary market usually did not need the conversion for several years. Their immediate needs were covered by a contract with a primary converter. This made for a near term market which was, at times, very thin. The changes in Conversion Value, shown in Table 1, reflected the degree of desire of sellers wishing to

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deconvert to respond to U_3O_8 opportunities; a utility strongly committed to selling inventory would be less price sensitive than a utility testing the market.

The withdrawal of low cost sellers from the market accounted for the substantial *increase* in Conversion Value in April, occurring in the midst of an apparent oversupply. The following month's *decrease* of 25 cents demonstrated the volatility of the thin market and the influence of limited opportunities upon the market as a whole. In addition, the subsequent slow decline in Conversion Value was the result of aggressive marketing on the part of primary converters, particularly in the longer term, in response to secondary market competition.

TRANSACTIONS

December Transactions

There are nine uranium sales transactions reported this month:

1. A US producer signed a long term contract with a US utility for between two million and four million pounds U_3O_8. Delivery will take place between 1983 and 1993.

2. A Canadian producer sold between 100 thousand and 300 thousand pounds U_3O_8 to a European utility.

There were seven more transactions reported during December, all for relatively small quantities and all for spot or near term delivery:

3. In three separate instances US producer sellers and US producer buyers concluded transactions for immediate delivery with quantities less than 50 thousand pounds.

4. A European seller sold between 50 thousand and 100 thousand pounds U_3O_8 to a European buyer with delivery taking place immediately.

5. A US utility sold less than 50 thousand pounds U_3O_8 to a US producer with delivery taking place in 1981.

6. A US producer sold less than 50 thousand pounds U_3O_8 to a US utility with delivery taking place in 1981.

7. Finally, a US seller sold less than 50 thousand pounds U_3O_8 to a US producer for immediate delivery.

In this month's only reported loan transaction, a European firm lent between 100 thousand and 300 thousand pounds U_3O_8 to a Canadian producer. The material will be delivered early in 1982 and replaced in two or three years.

There are no conversion transactions reported this month.

1981 Transactions

Uranium sales in 1981 reflected the general withdrawal of US suppliers from the intermediate and long term markets and included a substantial proportion of producer purchases and utility sales in the spot and near term markets. Table 4 details the geographical flow of the material sales over the past year by breaking down the transactions reported in the Nuexco Reports in 1981 according to buyer and seller regions. Table 4 includes only those transactions which were reported in the Nuexco Report and is not intended to represent all the transactions which took place during 1981. Certain transactions are not included, either because reporting them would compromise the source of the material or because Nuexco became aware of the transaction at a point when reporting it would no longer be timely.

Sellers and buyers in the United States dominated the spot and near term market volume, as Table 4A shows. Twenty-four of the 33 spot or near term transactions, comprising almost 60 percent of the material, occurred between US sellers and US buyers. Most of the rest had one US participant. Table 5A, which shows the corresponding data for 1980, indicates that the geographical flow of material in 1981 was quite similar to that of 1980. The US-to-US transactions constituted most of the contracts signed as well as most of the volume. What did change considerably, however, is the total amount of material that was sold in the spot and near term markets. While the volume of sales in the spot and near term markets was more than 12 million pounds U_3O_8 in 1980, it dropped 50 percent in 1981 to less than six million pounds.

In the longer term market (contracts with deliveries taking place more than one year after contract signature) Australian and Canadian sellers were dominant, as Table 4B outlines. Three-quarters of the longer term material sold came from producers in these two countries. US sellers accounted for only one-sixth of the material sold, reflecting the effects of high production costs. In 1981, the US was less of a factor in the long term market than it was in 1980 (Table 5B). At the same time, Australia and Canada increased their market share. The volume of sales in the longer term markets dropped 13 percent, from approximately 42 million pounds U_3O_8 in 1980 to approximately 36.5 million pounds in 1981.

Table 6 breaks down according to status, producer or non-producer, the same spot and near term transactions

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Table 4

SUMMARY OF URANIUM SALES TRANSACTIONS REPORTED IN THE NUEXCO MONTHLY REPORT DURING 1981[1]
(number of transactions and thousands of pounds U_3O_8)

A. SPOT[2] AND NEAR TERM[3] TRANSACTIONS

	Buyer Group				
Seller Group	**Europe**	**Far East**	**US**	**Other**	**Total**
Africa					
Australia					
Canada	(1) 200		(1) 400		(2) 600
US	(3) 700	(4) 1,100	(24) 3,400		(31) 5,200
Other					
TOTAL:	(4) 900	(4) 1,100	(25) 3,800		(33) 5,800

B. LONGER TERM[4] TRANSACTIONS

	Buyer Group				
Seller Group	**Europe**	**Far East**	**US**	**Other**	**Total**
Africa					
Australia	(3) 18,900				(3) 18,900
Canada	(1) 3,400		(2) 4,700		(3) 8,100
US			(5) 6,000		(5) 6,000
Other		(1) 3,500			(1) 3,500
TOTAL:	(4) 22,100	(1) 3,500	(7) 10,700		(12) 36,500

[1]Nuexco Reports 150-161. Loans not included.
[2]Spot means immediate delivery.
[3]Near term means all deliveries completed within 12 months after contract execution.
[4]Longer term means final delivery takes place more than 12 months after contract execution.

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Table 5

SUMMARY OF TRANSACTIONS REPORTED IN THE NUEXCO MONTHLY REPORT DURING 1980[1]
(number of transactions and thousands of pounds U_3O_8 involved)

A. SPOT AND NEAR TERM TRANSACTIONS

	Buyer Group				
Seller Group	**Europe**	**Far East**	**US**	**Other**	**Total**
Africa				(2) 1,000	(2) 1,000
Australia					
Canada	(1) 300		(1) 800	(1) 100[2]	(3) 1,200
US	(9) 2,200	(1)*	(32) 6,100[3]	(1)*	(43) 8,300
Other	(5) 1,000[4]	(1)*	(1) 200	(1) 400	(8) 1,600
TOTAL:	(15) 3,500[4]	(2)*	(34) 7,100[3]	(5) 1,500	(56) 12,100

B. LONGER TERM TRANSACTIONS[2]

	Buyer Group				
Seller Group	**Europe**	**Far East**	**US**	**Other**	**Total**
Africa	(2) 8,700	(1) 8,000			(3) 16,700
Australia	(2) 4,800[6]	(1) 3,000[6]	(1) 4,500		(4) 12,300[6]
Canada		(1) 4,200			(1) 4,200
US	(4) 1,600	(1) 3,100	(2) 3,400		(7) 8,100
Other				(1) 600[5]	(1) 600
TOTAL:	(8) 15,100	(4) 18,300	(3) 7,400	(1) 600	(16) 41,900

[1]Nuexco Reports 138 through 149.
[2]Near term means delivery within one year after contract signature. Longer term means final delivery more than one year after contract signature.
[3]Includes four loans totaling 900,000 lbs. U_3O_8 equivalent and two U_3O_8/UF_6 swaps totaling 400,000 lbs. U_3O_8 equivalent.
[4]Includes one loan totaling 100,000 lbs. U_3O_8.
[5]Includes one loan totaling 600,000 lbs. U_3O_8.
[6]Totals for Australia do not include 1980 transactions between Energy Resources of Australia and its Japanese and German shareholders.
*Quantities less than 50,000 pounds U_3O_8.

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Table 6

SUMMARY OF SPOT AND NEAR TERM URANIUM SALES TRANSACTIONS REPORTED IN THE NUEXCO MONTHLY REPORT DURING 1981
(number of transactions and thousands of pounds U_3O_8)

	Buyer				
Seller	US Producer	US Non-Producer	Non-US Producer	Non-US Non-Producer	Total
US Producer[1]	(13) 1,000	(6) 800		(5) 900	(24) 2,700
US Non-Producer[2]	(3) 600	(2) 1,000		(2) 900	(7) 2,500
Non-US Producer		(1) 400		(2) 300	(3) 700
Non-US Non-Producer					
TOTAL:	(16) 1,700	(9) 2,200		(9) 2,100	(34) 5,900

[1]"Producer" means any company directly involved in mining uranium.
[2]"Non-producer" includes utilities, government agencies, fuel fabricators and others not directly involved in mining uranium.

Table 7

SPOT AND NEAR TERM[1] SALES TRANSACTIONS REPORTED IN THE NUEXCO MONTHLY REPORT DURING 1980[2]
(number of transactions and thousands of pounds U_3O_8)

	Buyer				
Seller	US Producer	US Non-Producer	Non-US Producer	Non-US Non-Producer	Total
US Producer[3]	(9) 1,475	(8) 1,591		(8) 1,371)	(25) 4,437
US Non-Producer[4]	(6) 1,055	(4) 1,176		(3) 385	(13) 2,616
Non-US Producer		(1) 750	(2) 370	(5) 2,092	(8) 3,212
Non-US Non-Producer		(1) 210	(1) 210	(1) 28	(3) 448
TOTAL:	(15) 2,530	(14) 3,727	(3) 580	(17) 3,876	(49) 10,713

[1]Near term means delivery within one year after contract signature.
[2]Nuexco Reports 138 through 149.
[3]"Producer" means companies directly involved in mining uranium.
[4]"Non-producer" includes utilities, government agencies, fuel fabricators and others not directly involved in mining uranium.

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reported in Table 4. The somewhat unstable market conditions of 1981 were unusual in that there was a large amount of sales activity by utilities and other non-producers and a substantial amount of purchasing activity by producers. Sales by US non-producers accounted for 42 percent of the spot and near term volume in 1981; purchases by US producers accounted for almost 30 percent of the spot and near term volume. Conventional transactions, sales from producers to non-producers, accounted for only 40 percent. (The percentages total more than 100 because some non-producers sold to producers.) These percentages are similar to those of 1980 shown in Table 7; the major difference is in the much smaller volume of material sold in 1981.

Finally, Table 8 breaks down the conversion transactions that occurred in 1981 and were reported in the Nuexco Monthly Report. All of the transactions listed in Table 8B were secondary transactions, i.e., sales in which a primary converter was not the seller. Table 8 also shows that while the volume of conversion sales (including both the primary and secondary markets) was significant, the majority of the sales occurred in the US.

These various tables would suggest a shift in long term emphasis to non-US markets both for supply and demand. While activity in the US continued to dominate the near term market, much of this activity reflected a redistribution of inventory from utilities to high cost producers. In the longer term, low-cost Canadian and Australian suppliers, despite certain government imposed restrictions, have competitive advantage in the marketplace. European buyers are becoming the demand segment most significant for the long term, while the US nuclear industry stagnates.

Table 8

SUMMARY OF CONVERSION TRANSACTIONS REPORTED IN THE NUEXCO MONTHLY REPORT DURING 1981
(number of transactions and thousands of pounds U)

A. SPOT AND NEAR TERM TRANSACTIONS

	Buyer Group				
Seller Group	**Europe**	**Far East**	**US**	**Other**	**Total**
Africa	—	—			
Australia	—				
Canada	—				
US	—		(7) 4,600	(1) 500	(8) 5,100
Other	—				
TOTAL:	—		(7) 4,600	(1) 500	(8) 5,100

B. LONGER TERM TRANSACTIONS

	Buyer Group				
Seller Group	**Europe**	**Far East**	**US**	**Other**	**Total**
Africa	—				
Australia	—				
Canada	—				
US	—		(2) 2,000	—	(2) 2,000
Other	—				
TOTAL:	—		(2) 2,000	—	(2) 2,000

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URANIUM MARKET

AFRICA

South Africa's nuclear power program made substantial progress during 1981. The Electricity Supply Commission (ESCOM) Koeberg project remains on schedule with start-ups planned for late 1982 and late 1983 for Units 1 and 2 respectively. South Africa is also planning to designate a second nuclear plant site.

The biggest potential problem for the South African nuclear program is that of enrichment safeguards. Although ESCOM has temporarily solved the problem of enriched uranium supply for the Koeberg units, the question of enrichment safeguards remains.

South Africa's uranium production held up fairly well during 1981. Although West Rand Consolidated ceased uranium production in August and put its uranium plant on standby, total South African uranium production for 1981 should match 1980's total of 15.7 million pounds U_3O_8.

Comparing uranium production in South Africa over the past three quarters reveals a slight downward trend, from 4.1 million pounds U_3O_8 in the first quarter of 1981 to 3.95 million pounds in the second and 3.85 million pounds in the third. With most of its production committed under long-term higher priced contracts, South Africa has been reluctant to participate in the spot market at current price levels and, as a consequence, some uncommitted production is being stockpiled in anticipation of higher prices in the future.

For the most part, South African uranium producers have curtailed long term expansion plans and are limiting additional development to that necessary to supply existing commitments. As Beisa and Western Areas come on stream, South African production will probably rise somewhat in 1982 and 1983. In spite of the weak market, the substantial reserves and extensive infrastructure of South Africa's uranium producers leave them well positioned to increase production rapidly if demand rises substantially or when the price structure allows them to displace more costly production.

The resilience of the South African uranium industry in this period of relatively low market prices is due to several factors:

1. Production costs are generally low, because so much of South African uranium is produced as a byproduct or a coproduct of gold.

2. The richness of South Africa's gold deposits enables the gold producers to remain profitable, even if both uranium and gold market prices are low.

3. Because all South African gold sales are payable in US dollars, the effect of the fall in the price of gold has been largely cushioned by the increase in value of the rand with respect to the US dollar.

4. The structure of South Africa's industry lends flexibility to producers' operations. For example, Vaal Reefs was able to link up with Afrikander Lease and is now supplying the latter's customer. Also, St. Helena was able to use its tax shield to take over Beisa and maintain the viability of that uranium production operation.

5. The multitude of uranium-bearing reefs enhances operational flexibility. For example, Randfontein switched reefs to make up a uranium shortfall encountered in the millsite section.

6. South Africa's reputation for reliable supply has been an important factor in developing loyalty and sound long term relationships among its traditional customers.

In **Southwest Africa (Namibia)**, 1981 production at the Rossing facility will approximate 1980's total of some 10.5 million pounds U_3O_8. Essentially all this production was delivered under long-term agreements. Development of additional production capability must await strengthened demand and prices as well as resolution of current political uncertainties.

AUSTRALIA

Production plans in Australia, for the most part, proceeded on schedule during 1981. The Ranger uranium project, owned by Energy Resources of Australia (ERA), was brought to completion in October 1981, twelve years after its discovery. The project has a design capacity of 3,000 tons of uranium per year and the mine and mill are presently working at the full level. A sales contract signed in January with the Swedish utility Oskarshamnsverkets Kraftgrupp Actiebolag (OKG) for 2,845 tons U_3O_8 brought the sales commitments of ERA to 40,000 tons. Concurrent with the purchase, OKG acquired a one percent shareholding in ERA. Together with other Australian uranium producers, ERA experienced shipping delays of its uranium production because of union bans at the waterfront, but the reversal of union policy now enables unhindered export of uranium from Australian ports. ERA increased the reserves of the Ranger No. 3 orebody by 15,100 tons U_3O_8 contained in probable ore.

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URANIUM MARKET

Pilot plant programs associated with the first stage of the Yeelirrie uranium development (75 percent owned by Western Mining Corp. (WMC)) were successfully completed during 1981. WMC will market directly 40 percent of the planned 2,500 tons U_3O_8 annual production from Yeelirrie. The remainder will go to the joint venture partners, Esso Exploration and Production Australia Pty., Ltd. (50 percent) and Urangesellschaft (ten percent). No sales contracts have been announced, but WMC has been very active in the market.

WMC has also been carrying out an intensive exploration program on its Olympic Dam copper-uranium-gold project in South Australia. An exploration shaft is being sunk to provide underground access and a bulk sample for metallurgical testing. Environmental studies are in progress. The deposit is large and it is expected that the exploration and evaluation phase will last several years.

Pancontinental Mining Ltd. (Pan Con) has started serious negotiations with local aboriginal groups for land use compensation in the form of royalties, over its Jabiluka production. Progress appears to be much slower than expected. Government development consent will not be given until full agreement is reached with the traditional land owners. Under current government marketing guidelines, Pan Con has held numerous explorative discussions with potential purchasers of uranium, but until development consent is obtained, the company is not authorized to enter into firm commitments.

Wyoming Mineral Corp., a wholly-owned subsidiary of Westinghouse Corp., sold all of its Australian uranium interest during 1981. The three named Australian defendants in the Westinghouse antitrust action, Mary Kathleen Uranium, Ltd. (MKU), Queensland Mines, Ltd. (QML) and Pan Con settled out of court with Westinghouse on the basis of sizable cash payments.

During 1981, the Uranium Enrichment Group of Australia (UEGA) completed a preliminary study into the possibility of establishing an enrichment industry in Australia. As a result, a formal feasibility study over a two-year period will be conducted. Discussions are proceeding with overseas holders of technology, particularly regarding centrifuge enrichment.

Australia concluded bilateral safeguards agreements with Sweden, France and the Euratom community this year. Negotiations with Japan, to date, have been unsuccessful, and unless a safeguards agreement is in force between these two countries, uranium deliveries under sales contracts signed after 1971 will be held up.

The 1981 outlook for uranium production in Australia ended on a positive note with an effective end to the union ban on uranium export shipment. A 16-9 vote in favor of exports at a recent Australian Council and Trade Union (ACTU) executive meeting, gave the green light to uranium shipments. The Seamen's Union, the Transport Workers and the Waterside Workers had been the only members actively supporting the previous non-binding ACTU policy for a moratorium. Their position became more and more untenable as the Northern Territory Government took steps to make shipments via a specially built wharf on government land, and also as the Federal Court in Brisbane granted MKU an injunction against the Brisbane Waterside Unions. This all-out pressure, together with a more tolerant attitude of the Australian public towards uranium mining, has been responsible for the outcome of the union vote.

The Honeymoon uranium project is South Australia, the first in situ leach project in the country, was given development approval by the federal government during 1981. A pilot plant will be required and commercial operations will begin in 1985-1986 at 450 tons U_3O_8 per year. The Ben Lomond uranium project owned by Minatome Australia Pty., Ltd. completed its exploration tunnel and is in the process of carrying out metallurgical tests in the context of its feasibility study for the development of a mill producing 400 tons uranium per year in northern Queensland.

CANADA

New nuclear safeguard agreements were recently signed between Canada and both the European Economic Community (EEC) and Sweden. The EEC agreement was signed in Brussels, Belgium on December 18; the agreement with Sweden was signed in Ottawa on the same day.

The agreements represent a change in the Canadian government's approach to reprocessing, giving advance consent to reprocessing of Canadian origin uranium on a general rather than case-by-case basis. However, Canadian government officials do not view the agreements as representing a change in Canada's nonproliferation policy. Countries which purchase uranium from Canada are still required to adhere to International Atomic Energy Agency guidelines on nuclear nonproliferation.

1981 was an important year in the Canadian uranium

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industry in that several contracts were completed for the sale of Saskatchewan uranium production to US and European utility buyers. The sales represented the first truly arms-length sales of production from the new deposits in Western Canada. A few of these transactions have already been approved by the Canadian government. As anticipated, the approval process is taking about 60 days. In addition to the completed sales, US buyers are still in negotiation for long term supply of U_3O_8 from Western Canada. Some of these agreements extend ten years or more and the contractual terms are such that the sellers will profit by market improvements.

Market factors have, not surprisingly, resulted in substantially lower interest in exploration during 1981 but the development of new production facilities in Ontario and Saskatchewan continued.

In Saskatchewan, work on the Key Lake project continued in 1981 and the project received final recommendations by the Key Lake Board of Inquiry. The Board's report is expected to provide the basis for the conditions under which the project may proceed. The Key Lake project is being developed by the Saskatchewan Uranium Joint Venture, which is owned by Saskatchewan Mining Development Corp. (one-half), Uranerz Exploration and Mining Ltd. (one-third) and Eldor Resources Ltd. (one-sixth). The mining of the ore is proposed to begin in 1983 and continue at least until 1998. The project is scheduled to produce at least eight million pounds U_3O_8 per year. Reasonably assured resources have been reported at more than 150 million pounds U_3O_8.

Gulf Minerals Canada Ltd. and Uranerz continued to mine Rabbit Lake at an annual rate of about five million pounds U_3O_8. The mill at Amok Ltd.'s Cluff Lake project was completed during 1981. Mill capacity is designed for production of four million pounds U_3O_8 per year.

Eldorado Nuclear Ltd. announced December 3 that it will close its Beaverlodge mine and mill in Saskatchewan effective June, 1982. The mine has been in operation 28 years; 1981 production was about one million pounds U_3O_8. The Canadian government transferred Canada's uranium stockpile to Eldorado earlier in the year. Additionally, Eldorado's participation in the Key Lake project assures uranium supply without the unprofitable Beaverlodge facility.

Rio Algom Ltd. reported that its Panel uranium mine and mill at Elliott Lake was profitable during 1981 and operated at a high level of performance. The development of the Stanleigh project was reported to be on schedule with production expected to commence in 1983. The entire output from the project is under contract to Ontario Hydro, which is providing the financing for the project. The agreement, signed in 1978, gives Ontario Hydro the option to reduce the annual deliveries by 15 percent. The Canadian utility announced in October, 1981, that it chose to exercise that option. The contract calls for delivery of 72 million pounds which will now be extended more than the original 36 years because of the annual reductions.

Ontario Hydro also announced revisions in its contract with Denison Mines Ltd. The revised agreement calls for a nine percent reduction over the 31-year contract period and a one-year extension of deliveries (to 2010). A legal dispute over the production costs of Denison's Elliott Lake properties prompted the action.

The price for Consolidated Canadian Faraday's deliveries to AGIP Nucleare S.p.A. from the Madawaska mine was fixed at Canadian $32.75 (equivalent to about US $27.00). This price will cover the June 1, 1981 to December 31, 1982 period. Operations are expected to be marginally profitable.

Canada's uranium industry was taken by surprise during 1981 when legal charges were brought against six uranium companies. The charges contended that the international uranium cartel of the early 1970's had caused Canadian consumers, and especially Ontario Hydro, to pay more for uranium than they would have otherwise. The action is still under review.

Canada's current nuclear power plant output is 5,270 MWe, all of which is generated in the province of Ontario. 1981 showed high capacity factors for all of the generating stations. Twelve additional reactors are under construction by Ontario Hydro and the nuclear output is expected to more than double in the next ten years. Canada's 1981 total uranium demand was about 1.2 million pounds U_3O_8.

EUROPE

The effect of the Socialists' election victory on the future of **France's** nuclear power program and industry was the important question of 1981. Some of the answers are known. Five frozen nuclear plant sites were unfrozen and the government granted approval for construction

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to begin on six units in 1982 or 1983. Table 9 lists the units, all of which are scheduled to start up in 1988 or 1989.

Table 9

REACTORS RECEIVING FRENCH GOVERNMENT APPROVAL IN 1981 FOR CONSTRUCTION STARTS IN 1982 OR 1983

Reactor	Size (MWe)
Chinon	900
Nogent-sur-Seine 2	1300
Cattenom 3	1300
Chooz B1	1300
Penly 1	1300
Golfech 1	1300

France's nuclear installed capacity by the end of the year was almost 21.3 GWe. 8 new plants were connected to the grid. They are listed in Table 10.

Table 10

REACTORS CONNECTED TO THE GRID IN FRANCE IN 1981

Reactor	Size (MWe)
Blayais 1	920
Dampierre 3	900
Dampierre 4	900
Gravelines 4	920
St. Laurent B1	880
St. Laurent B2	880
Tricastin 3	900
Tricastin 4	900

By its apparent popular consultation, the government seems to have taken the steam out of the opposition to its nuclear program.

During 1981, the French government extended its control (through Cogema) over the various stages of the nuclear fuel cycle. Cogema slightly reduced its domestic uranium production and postponed the start-up of some of its overseas projects. At a time when other countries were cutting back their exploration programs, Cogema maintained its overseas exploration projects. The purchase of Pathfinder in the US is near completion; it will give Cogema a significant position in the US, adding to Cogema's already established production capabilities in France, Canada and Africa.

In the enrichment field, it is Nuexco's opinion that Eurodif's prices for separative work will soon be competitive with those of the US Department of Energy. In the area of reprocessing, France's strong position will continue under Socialist government approval.

Installed nuclear capacity in the **United Kingdom** at the end of 1981 was 6.7 GWe. While no new nuclear reactors were commissioned this year, the first reactors at Dungeness B, Hartlepool 1 and Heysham 1 have completed their fuel loading and are expected to be commissioned during the first half of 1982. These plants are among the four pairs of AGR reactors (600 MWe each) ordered by CEGB between 1965 and 1971.

For many years, an important question in the UK nuclear power field concerned the type of technology to be used in the nuclear program. AGR technology has seen the most demand, although CEGB has applied for statutory consent to construct a PWR at Sizewell. Public inquiry into the PWR system is expected to take place next year.

Forecasts of the growth of electricity demand in the UK are being revised downward. However, over the next ten years a considerable number of old plants will need to be replaced. The future role of nuclear power was aided by recently published figures by the CEGB showing nuclear power plants having a distinct advantage over coal plants in a comparison generating costs.

The first of **Spain's** 12 unit modern program, Alvarez-1, began commercial operations during 1981. The 930 MWe PWR achieved initial criticality in April and was placed in service in May. Since 1972, three units, comprising a total of 1,073 MWe, have been operating in Spain. Thus, with the addition of Alvarez-1, Spain's installed nuclear capacity at the end of 1981 was 2050 MWe. Construction work continued this year on the other eleven units, representing nearly 11 GWe. There were no new plants ordered during 1981, nor is it likely that additional plants will be ordered in 1982.

In February, Spain began to build its own nuclear fuel fabrication plant using Westinghouse and General Electric designs. Initial capacity is planned at 300 tons uranium per year beginning in 1983.

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URANIUM MARKET

Uranium production in **Portugal** totaled approximately 130 metric tons U_3O_8 in 1981. The country's producing entity, Empresa Nacional de Uranio (ENU), has plans to expand domestic production to about 460 metric tons U_3O_8 by 1985 or 1986. The decision to mine the Nisa deposit in the southeastern part of Portugal was made this year. Annual production from Nisa is expected to be about 250 metric tons of U_3O_8.

The decision regarding the Kaiseraugst nuclear plant in **Switzerland** was one of the major events during 1981 for the Swiss nuclear power program. The Kaiseraugst project received the Swiss government's preliminary approval for construction. However, the actual start of construction is contingent upon further approval by a majority of the Swiss parliament. A vote will not likely be held prior to the end of 1982. All four of Switzerland's operating nuclear plants, totaling 1,300 MWe of installed nuclear capacity, continued to perform exceedingly well during 1981.

In **Italy**, a formal announcement of the government's new nuclear power program was made during 1981 and called for six 1,000 MWe plants in operation by the early 1990s. A positive development in achieving these goals was the government's agreement to consult a larger group of people and localities on future energy programs. This includes consultation on the siting of future nuclear power plants.

Italy's Caorso plant, an 860 MWe BWR, began operation under a full power and test program license during 1981. The final full power license for routine operation will probably not be granted before the spring of 1982. In the meantime, the plant can continue to operate at full power under its current license. The Latina (200 MWe Magnox) and Caorso plants are operating extremely well, as of the end of 1981. The Trino (270 MWe PWR) and Garigliano (160 MWe BWR) plants are both down for repairs and upgrading of systems. The Trino plant may return to operation by early 1983. There is not currently a schedule for the return to operation of the Garigliano plant.

In September of 1981, the government in **Holland** formally initiated a program which will lead to a decision on whether to build more nuclear power plants. A steering committee of about five members, made up of representatives of both the pro and con sides, was set up under a "neutral" chairman. An initial information and discussion phase will last until early 1982. After several initial reports, a final report will be sent to the Dutch Parliament in late 1983. The parliament decision is expected sometime in 1984.

The two nuclear plants operating in Holland, Dodewaard (54 MWe) and Borssele (475 MWe), both operated very well during 1981. A special government committee was appointed recently to study the financial impact and consequences of closing down the Dodewaard plant. A report is expected in about six months. It is anticipated that the report will not recommend closing of the plant.

In **Finland**, the four Finnish nuclear power plants achieved new records for production during 1981. It is likely that the 1981 figures will show nuclear having produced about 35 percent of all electrical power in Finland. The TVO Unit 1 achieved an availability of over 80 percent.

Under Finland's long term policy, a new nuclear plant is being planned at the Loviisa site. Feasibility studies of both Russian and French designed reactors are underway.

In **Sweden**, two energy bills introduced in Parliament in early 1981 included a schedule for a large reduction of Sweden's oil dependence by 1990. An increased contribution from nuclear power was part of the proposed program. Sweden currently has nine nuclear power plants in operation. However, the Ringhals PWR Units 3 and 4 were removed from service during 1981 because of steam generator problems. A lengthy delay is likely before the units can be restarted. The balance of the Swedish nuclear power plants operated well during 1981. Construction continues on OKG Unit 3 and Forsmark Unit 3.

The Swedish government and industry decided not to mine the Pleutajokk uranium deposit. They concluded the project would have been uneconomical.

In **Germany**, the Grafenrheinfeld plant achieved its first criticality in December of 1981. However, the outlook for West Germany's domestic nuclear power program on the whole is not very positive. Pressures from the ecology movement have put the program at an apparent standstill.

The West German government decision not to finance the increased costs of the fast breeder reactor will most likely present a major problem for the reactor. Three utilities have agreed to put up about an additional 500 million DM for the project. This leaves about another one billion DM of uncovered costs.

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FAR EAST

While official forecasts for nuclear growth in **Japan** were scaled back during 1981, it was, in fact, a year of substantial progress for the Japanese nuclear industry. Kyushu Electric Power Co.'s 559 MWe Genkai Unit 2 was successfully brought on line in late March, bringing Japan's nuclear capacity to 15,676 MWe.

In mid-July Tokyo Electric Power Co. (TEPCO) officially announced the placing of contracts for two additional 1,100 MWe Boiling Water Reactors (BWR's). Kashiwazaki Unit 2 was awarded to Hitachi. Both units are scheduled for operation in the late 1980's.

About 10,000 MWe are currently under construction with official operating dates scheduled between 1981 and 1986. About 3,000 additional MWe have been approved by the Electric Power Resource Development Coordinating Council as part of Japan's official generating plan. Even though these units have yet to receive construction licenses, they are, nevertheless, scheduled for operation in 1985 and 1986.

Uranium market activity was, however, at a reduced level. Large uranium inventories, large, long-term forward commitments and a weakening price structure all dictated a "go slow" policy. However, discussions regarding additional long-term supply have continued, particularly with potential Australian and Canadian suppliers. Prices paid during 1981 for deliveries under existing contracts were in the range of US $37.00 to $39.00 per pound U_3O_8 and reportedly will edge lower in 1982.

In mid-1981, the **Philippines'** National Power Corp. (NAPOCOR) arranged the purchase of 622,000 pounds U_3O_8 representing the first core of its PNPP Unit 1. The uranium was delivered in December 1981 for conversion. As yet, no firm arrangements have been concluded for NAPOCOR's ongoing uranium needs of some 200,000 pounds U_3O_8 annually which, according to the unit's current schedule, will begin in 1986.

Having been successful in making its initial purchase on a spot basis and having relatively small annual needs, NAPOCOR might very well continue to buy in the spot market rather than long term.

Existing inventories and long-term contracts cover **Korea's** uranium needs until the late 1980's. A recent solicitation sent to suppliers worldwide sought offers on some 35 million pounds U_3O_8 for delivery in the period 1990 through 2000. In response to the solicitation, proposals were submitted by suppliers from Australia, Canada, Europe and the US. Korea has demonstrated itself to be an extremely price sensitive buyer, and it can be anticipated that negotiations for such large, long-term supply would be difficult and protracted.

Taiwan has two nuclear units in operation, a third expected in operation in 1982 and three more under construction. A decision on Taiwan power Co.'s Units 7 and 8 is expected in early 1982, with the French providing the principal competition to the US suppliers. Taiwan Power, with inventories of fabricated fuel and natural uranium in addition to ongoing contractual commitments with US and South African suppliers, has no unfilled requirements until the late 1980's. However, due to its international situation, Taiwan has unusual security of supply concerns. It can be anticipated that additional supply arrangements providing for deliveries as early as 1986 will be made to maintain desired inventory levels.

UNITED STATES

The failure to resolve a contract dispute between Washington Public Power Supply System (WPPSS) and Western Nuclear, Inc. has resulted in the former filing an anti-trust suit against Western Nuclear and subsequently against a number of other US producers. WPPSS seeks to have its contract with Western Nuclear declared void and unenforceable and asks for reimbursement of the monies paid under the contract. The contract in question was signed in 1975 and covered 5.5 million pounds U_3O_8 for supply to WNP-1, WNP-4 and WNP-5, with delivery beginning in 1979. At this time, a little more than half of the uranium has been delivered. In a counter claim, Western Nuclear seeks performance under the contract.

The US uranium industry in the year 1981 can be characterized by one word. Liquidation. Momentum maintained US uranium production at record high levels in 1980 despite falling prices. However, 1981 saw almost every major US producer announcing shutdowns, cut backs or delays in response to the depressed market. The only exceptions to the trend were those producers fully committed to long term contracts.

US production peaked at 42.5 million pounds U_3O_8 in 1980. Preliminary Nuexco estimates indicate a reduction to 37 million pounds in 1981. The real impact of the industry liquidation will be felt in 1982 when US production is expected to fall below 28 million

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pounds U_3O_8.

US production continued to out-strip consumption by close to a two to one margin. This caused US commercial inventories to increase from about 148 million pounds U_3O_8 at the beginning of 1981 to 162 million pounds at the end of the year. These figures include all commercial inventory not in the fabrication pipeline, including concentrates, natural UF_6 and enriched UF_6. This large inventory position continues to contribute to the depressed market. Some US utilities were active as sellers in 1981 in attempts to partially liquidate excess inventories.

The underlying problem with the US uranium market, insufficient consumption, was aggravated in 1981. Only three full power operating licenses were granted during the year. During the same period, six reactors were cancelled and twenty-one others were delayed. Table 11 itemizes the delays, cancellations and operating licenses issued in the US in 1981.

The cancellation of Hope Creek Unit 2 was especially important because the plant was 18 percent complete. Table 12 itemizes the reactors which have been cancelled in the US within the past three years. Before Hope Creek 2, the only cancellation of a unit significantly greater than one percent complete had been that of North Anna 4 in 1980, when it was 13 percent complete.

It is Nuexco's opinion that there will be additional utility decisions to cancel at least fourteen reactors due to financial and political considerations. Table 11 indicates that the six US reactors cancelled in 1981 represented a total sunk cost of more than one billion dollars. The expected costs of completing those units were much higher. Cancelling those projects will improve those utilities' financial positions in the long run, even if they are not allowed to recover the sunk costs. Reactors having a low percentage completion are, all other things being equal, more vulnerable to cancellation than others. However, the cancellations of North Anna 4 and Hope Creek 2 indicate that cancellations of units up to 20 percent complete are possible. It is Nuexco's opinion that the cancellations of units up to 40 percent complete are not out of the question.

Table 13 lists the US reactors under construction, in descending order of completion percentage. There are 17 units on the list that have completion percentages of zero. Seven others are 3 percent to 10 percent complete. Four others are 11 percent to 18 percent complete. So, 28 reactors under construction in the US fall into the high-risk category of less than 20 percent complete. Nuexco believes at least fourteen more cancellations will take place in the next few years; not necessarily all of those expected cancellations are in the high-risk category.

The election of President Reagan had sparked some hope of resurgence of nuclear power in the US. However, realists accepted that there was little that could be done directly. The utility industry still does not have the sound financial health which is the prerequisite for the recovery of the nuclear power industry. However, President Reagan's statement in support of nuclear power, issued in October, 1981, at least gave recognition to the problems besetting the nuclear industry, and the financial problems of the utilities.

It has been postulated that the length of the business cycle in the uranium industry should approximate the amount of time necessary for the nuclear industry to go through major changes in direction, which should, in turn, be no less than the lifetime of a nuclear plant construction project. In the US, this is on the order of ten to twelve years or longer.

There are numerous similarities between the current market and that of the early 1970's. The 1970 depression in uranium was broken, many think, by the nuclear industry boom in new orders in 1972-74 which brought about a market perception of increased demand in the future. A development of similar magnitude will probably be needed to bring about recovery from the current depression, and market observers continue to look for leading indicators that such a recovery will happen.

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Table 11

US NUCLEAR POWER PLANTS: 1981 SUMMARY

Full Power Operating Licenses Issued in 1981

Plant	Utility	Net MWe	Type
Salem 2	Public Service E&G	1115	PWR
Sequoyah 2	TVA	1148	PWR
McGuire 1	Duke Power Co.	1100	PWR

Cancellations in 1981

Plant	Utility	Net MWe	Type	% Complete At Cancellation	Cost (millions of $)
Bailly 1	NIPSCO	645	BWR	1	$ 200
Callaway 2	Union Electric	1150	PWR	0.5	$ 70
Shearon Harris 3	Carolina P & L	900	PWR	1	$ 187
Shearon Harris 4	Carolina P & L	900	PWR	1	for 3&4
Hope Creek 2	Public Service E&G	1070	BWR	18	$ 370
Pilgrim 2	Boston Edison	1150	PWR	0	$ 291
					$1,118

Projects Delayed in 1981*

Plant	Utility	Net MWe	Type	Delay From	Delay To	Number of Months
Allens Creek 1	Houston L&P	1200	BWR	–/88	–/91	36
Black Fox 1	PS Oklahoma	1150	BWR	7/85	7/91	72
Black Fox 2	PS Oklahoma	1150	BWR	7/88	7/94	72
Carroll County	Commonwealth Edison	1120	PWR	10/92	Indef	Indef
Carroll County	Commonwealth Edison	1120	PWR	10/93	Indef	Indef
Cherokee 1	Duke Power Co.	1280	PWR	1/90	Indef	Indef
Cherokee 2	Duke Power Co.	1280	PWR	1/93	Indef	Indef
Hartsville 1	TVA	1233	BWR	7/88	7/91	36
Hartsville 2	TVA	1233	BWR	4/89	4/92	36
Phipps Bends 1	TVA	1233	BWR	2/89	Indef	Indef
River Bend	Gulf States	940	BWR	4/84	12/85	32
South Texas Project 1	Houston L&P	1250	PWR	–/84	4/86	24
South Texas Project 2	Houston L&P	1250	PWR	–/86	4/88	24
Seabrook 2	PS New Hampshire	1150	PWR	–/85	5/86	12
Susquehanna 1	Pennsylvania P&L	1050	BWR	4/82	5/83	13
Susquehanna 2	Pennsylvania P&L	1050	BWR	4/83	5/84	13
WNP 4	WPPSS	1250	PWR	2/87	Indef	Indef
WNP 5	WPPSS	1240	PWR	12/87	Indef	Indef
Watts Bar 1	TVA	1177	PWR	11/82	1/84	14
Watts Bar 2	TVA	1177	PWR	8/83	10/84	14
Yellow Creek 1	TVA	1285	PWR	4/88	4/91	36

*Units delayed at least one year: determined by comparing the COD listing in the December 31, 1980 Nuclear News World List of Nuclear Power Plants (published in February, 1981) with the COD listed in the June 30, 1981 list (published August 1981). Also included are delays announced in 1981 but not included in the Nuclear News list.

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Table 12

CANCELLATIONS OF US NUCLEAR PLANTS

Reactor	Utility	Net MWe	Type	% Complete At Cancellation	COD At Cancellation
1981					
Bailly N-1	NIPSCO	645	BWR	1	-/89
Callaway 2	Union Electric	1150	PWR	0.5	-/90
Harris 3	Carolina P & L	900	PWR	1	-/94
Harris 4	Carolina P & L	900	PWR	1	-/92
Hope Creek 2	PSEG	1070	BWR	18	12/89
Pilgrim 2	Boston Edison	1150	PWR	0	Indef
1980					
Davis-Besse 2	Toledo Edison	906	PWR	0-lwa	4/85
Davis-Besse 3	Toledo Edison	906	PWR	0-lwa	4/87
Erie 1	Ohio Edison	1260	PWR	0	4/86
Erie 2	Ohio Edison	1260	PWR	0	4/88
Forked River	Jersey Central	1168	PWR	5.6	5/86
Greenwood 2	Detroit Edison	1264	PWR	0	9/90
Greenwood 3	Detroit Edison	1264	PWR	0	9/92
Haven 1	Wisconsin EP	900	PWR	0	6/89
Jamesport 1	LILCO	1150	PWR	0-cp	6/89
Jamesport 2	LILCO	1150	PWR	0-cp	6/91
Montague 1	Northeast Utilities	1150	BWR	0	Indef
Montague 2	Northeast Utilities	1150	BWR	0	Indef
New Haven 1	NY States E&G	1250	PWR	0	5/93
New Haven 2	NY States E&G	1250	PWR	0	5/94
North Anna 4	VEPCO	907	PWR	13	0/92
Sterling	Rochester G & E	1150	PWR	0-cp	5/88
1979					
Palo Verde 4	Arizona PS	1270	PWR	0	5/88
Palo Verde 5	Arizona PS	1270	PWR	0	5/90
Greene County	PASNY	1200	PWR	0	7/86
NEP-1	New England Power	1150	PWR	0	Indef
NEP-2	New England Power	1150	PWR	0	Indef
Tyrone 1	Northern States Power	1100	PWR	0-cp	-/86

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Table 13

US NUCLEAR REACTORS UNDER CONSTRUCTION*

Reactor	Utility	% Complete	Current Commercial Operation Date
Diablo Canyon 1	Pacific Gas & Electric Co. (PG&E)	100	/82
LaSalle 1	Commonwealth Ediaon	99	4/82
Sequoyah 2	Tennessee Valley Authority (TVA)	99	7/82
Virgil C. Summer 1	South Carolina Electric & Gas Co.	99	6/82
San Onofre 2	Southern California Edison and San Diego Gas & Electric Co.	98	6/82
Zimmer 1	Cinncinnati Gas & Light Co.	95	/82
Diablo Canyon 2	PG&E	93	8/82
McGuire 2	Duke Power Co.	92	6/83
Susquehanna 1	Pennsylvania Power & Light	91	5/83
Grand Gulf 1	Mississippi Power & Light	90	10/82
Comanche Peak 1	Texas Utilities Generating Co.	88	/82
Palo Verde 1	Arizona Public Service Co.	88	5/83
WNP 2	Washington Public Power Supply System (WPPSS)	85.8	2/84
Shoreham	Long Island Lighting Co.	85	1/83
Waterford 3	Louisiana Power & Light	85	3/83
Catawba 1	Duke Power Co.	83.4	3/84
Fermi 2	Detroit Edison Co.	83	11/81
LaSalle 2	Commonwealth Edison	82	12/82
Callaway 1	Union Electric Co.	80	4/83
San Onofre 3	Southern California Edison and San Diego Gas & Electric Co.	78	7/83
Clinton 1	Illinois Power Co.	77	8/83
Bryon 1	Commonwealth Edison Co.	76	10/83
Bellefonte 1	TVA	75	12/85
Perry 1	Cleveland Electric Illuminating Co.	75	5/84
St Lucie 2	Florida Power & Light	75	5/83
Watts Bar 1	TVA	74	1/84
Wolf Creek	Kansas Gas & Electric Co. and Kansas City Power & Light Co.	74	4/84
Midland 1	Consumers Power Co.	66	7/84
Midland 2	Consumers Power Co.	66	12/83
Limerick 1	Philadelphia Electric Co.	63	4/85
Braidwood 1	Commonwealth Edison Co.	62	10/85
Palo Verde 2	APS	61	5/84
Bryon 2	Commonwealth Edison Co.	60	10/84
South Texas Project 1	Houston Lighting & Power	60	/84
Bellefonte 2	TVA	59	9/86
Susquehanna 2	Pennsylvania Power & Light Co.	59	5/84
Watts Bar 2	TVA	58	10/84
Comanche Peak 2	Texas Utilities Generating Co.	52	/84
WNP 1	WPPSS	49.6	6/86
Braidwood 2	Commonwealth Edison Co.	48	10/86
Seabrook 1	Public Service Co. of New Hampshire	48	2/84
Shearon Harris 1	Carolina P&L	43	9/85
Beaver Valley 2	Duquesne	41.6	5/86
Perry 2	Cleveland Electric Illuminating Co.	40	5/88

URANIUM MARKET

Nine Mile Point 2	Niagara Mohawk Power Corp.	38	10/86
Millstone 3	Northeast Utilities	36	5/86
Hope Creek 1	PSEG	35	12/86
Hartsville A1	TVA	34	7/88
Catawba 2	Duke Power Co.	32	9/85
River Bend 1	Gulf States Utilities Co.	31	4/84
WNP 3	WPPSS	30.6	12/86
Limerick 2	Philadelphia Electric Co.	27.5	10/87
Phipps Bend 1	TVA	27	2/89
Hartsville A2	TVA	26	4/89
Yellow Creek 1	TVA	26	4/88
Marble Hill 1	Public Service Indiana	25	late 86
WNP 4	WPPSS	24.2	6/87
South Texas Project 2	Houston Lighting & Power	23	-/86
Grand Gulf 2	Mississippi Power & Light	22.4	9/86
Palo Verde 3	APS	21	5/86
Vogtle 1	Georgia Power Co.	18	5/85
Hartsville B1	TVA	17	Indef
WNP 5	WPPSS	13.7	12/87
Marble Hill 2	Public Service Indiana	11	late 87
Vogtle 2	Georgia Power Co.	10	11/86
North Anna 3	Virginia Electric & Power Co.	08.8	-/89
Seabrook 2	Public Service Co. of New Hampshire	08	5/86
Hartsville B2	TVA	07	Indef
Phipps Bend 2	TVA	05	Indef
Shearon Harris 2	Carolina Power & Light Coi.	03	3/88
Yellow Creek 2	TVA	03	Indef
Black Fox 1	Public Service Co. of Oklahoma	0-lwa[1]	7/91
Black Fox 2	Public Service Co. of Oklahoma	0-lwa[1]	7/94
Clinton 2	Illinois Power Co.	0-cp[2]	Indef
Allens Creek	Houston Light & Power	0	-/91
Carroll County 1	Commonwealth Edison Co. Interstate Power Company and Iowa-Illinois Gas & Electric Co.	0	Indef
Carroll County 2	Commonwealth Edison Co. Interstate Power Company and Iowa-Illinois Gas & Electric Co.	0	Indef
Cherokee 1	Duke Power Co.	0	Indef
Cherokee 2	Duke Power Co.	0	Indef
Cherokee 3	Duke Power Co.	0	Indef
Pebble Springs 1	Portland General Electric Co.	0	9/88
Pebble Springs 2	Portland General Electric Co.	0	9/90
Perkins 1	Duke Power Co.	0	Indef
Perkins 2	Duke Power Co.	0	Indef
Perkins 3	Duke Power Co.	0	Indef
River Bend 2	Gulf States Utilities Co.	0	Indef
Skagit-Hanford 1	Puget Sound Power & Light	0	-/91
Skagit-Hanford 2	Puget Sound Power & Light	0	-/93

*Information from Nuclear News World List as of June 30, 1981.
[1]Limited work authorization.
[2]Construction permit.

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MARKET DATA

Market Opportunities are *active* inquiries in the uranium market to buy, sell, borrow or lend. The data presented in this section are in no way intended to be indicative of the entire uranium market for the time period covered.

URANIUM SUPPLY

Nuexco Reference Number	Delivery Periods* (Thousands of Pounds U_3O_8) 0 to 1 Year	1 to 2 Years	2 to 3 Years	Remarks
Available for Sale:				
1475	1000			UF_6
1480	300	300	300	
1490	1000			
1575			500	Long Term
1589	50	50	50	Long Term
1581	150	150	150	Long Term
1600	250	250	250	Long Term
1610	300			
1637	500	500		
1684	500			UF_6
1738	750			UF_6
1749	350	200	200	
1770	300			
1774	50			
1804	615			
1805	500	500	500	Long Term
1807	700			
1810		750		
1812A	1000			
1814	250			
1818	250	250	250	Long Term
1824	30			
TOTAL:	8845	2950	2200	
Available for Loan:				
1695	225	325	325	UF_6
1742	200			
1785	1000			
1815	1000			UF_6
TOTAL:	2425	325	325	

***Measured from the date of this Report.**

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MARKET DATA

Market Opportunities are *active* inquiries in the uranium market to buy, sell, borrow or lend. The data presented in this section are in no way intended to be indicative of the entire uranium market for the time period covered.

URANIUM DEMAND

Nuexco Reference Number	Delivery Period* (Thousands of Pounds U_3O_8)			Remarks
	0 to 1 Year	1 to 2 Years	2 to 3 Years	
Inquiries to Purchase:				
1410	1500	1500	1000	
1459			200	Long Term
1603			100	Long Term
1634		400		
1699	265	510	250	
1704		200	200	Long Term
1724	650	500	500	Long Term
1732	50			
1744	1000			
1769	110			UF_6
1771	500			
1775	20			
1806		500	250	
1834	100			
1836	55			
TOTAL:	4250	3610	2500	
Inquiries to Borrow:				
1621	300			
1780	500			
1812	1000			
TOTAL:	1800			

*Measured from the date of this Report.

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MARKET DATA

Market Opportunities are *active* inquiries in the secondary market for UF_6 conversion services. The data presented in this section are in no way intended to be indicative of the entire market for the time period covered.

CONVERSION SUPPLY

Nuexco Reference Number	Delivery Period* (Thousands of Pounds U as UF_6) 0 to 1 Year	1 to 2 Years	2 to 3 Years	Remarks
1451	75			
1584	350	300	300	Long Term
1607	850			
1609	500	1500	1000	
1619		250	50	
1661	200			
1684	450			
1764	100			
1840	200			
TOTAL:	2725	2050	1350	

CONVERSION DEMAND

Nuexco Reference Number	Delivery Period* (Thousands of Pounds U as UF_6) 0 to 1 Year	1 to 2 Years	2 to 3 Years	Remarks
1594	400	400	950	Long Term
1622	500	500		
TOTAL:	900	900	950	

*Measured from the date of this Report.

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MARKET DATA

CURRENT TRANSACTIONS*

Uranium Transactions

Nuexco Reference Number	Delivery Period	Approximate Quantity (thousands of pounds, U_3O_8 equivalent)	Approximate Price as Percent of Current E.V.	Seller Group	Buyer Group	Remarks
1655	83-93	2001-4000	>100	US	US	Base price escalated
1658	82	101-300	–	Europe	Canada	Loan; return in 1985
1659	82	101-300	99	Canada	Europe	
1662	81	Less than 50	98	US	US	
1663	81	Less than 50	97	US	US	
1664	81	51-100	101	Other	Europe	
1668	81	Less than 50	98	US	US	
1674	81	Less than 50	97	US	US	
1675	81	Less than 50	96	US	US	
1680	81	Less than 50	99	US	US	

Conversion Transactions

Nuexco Reference Number	Delivery Period	Approximate Quantity (thousands of pounds, U equivalent)	Approximate Price as Percent of Current C.V.	Seller Group	Buyer Group	Remarks

None reported

*Transactions listed include not only those in which Nuexco was involved, but also all others of which Nuexco is aware.

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SUMMARY OF 1981 US URANIUM ACTIVITIES

Introduction

Uranium market activity continued to decline in 1981, resulting in a curtailment of uranium exploration and development activity. Various programs were cut back, postponed or canceled at every level as participants implemented money saving procedures. The decline in activity can be measured by the decrease in footage drilled during the year. Nuexco estimates that exploration and development drilling for 1981 will total between 13 and 14 million feet, a decrease of about 50 percent from the 1980 total of 28 million feet. Expenditures related directly to exploration and development drilling should total $70 to $80 million, 40 to 50 percent below the 1980 level.

In general, 1981 exploration activity was limited to fulfillment of property commitments. The acquisition of new properties was minimized and many existing property positions were reduced in size or canceled altogether. New exploration was limited to a few highly potential projects. Plans to develop new conventional projects were postponed indefinitely or canceled, while certain developing projects were terminated with contingent plans to resume development when market conditions become more favorable. Mine and mill production has likewise been curtailed or shut down.

It is noteworthy that the market decline has subsequently influenced the availability of reasonably assured uranium resources in the US. An assessment of reserves in a forward cost category of $25 per pound U_3O_8 was made by Nuexco in July 1981 (Nuexco Report 155) based on annual reserve figures released by USDOE on May 13, 1981. According to the DOE estimate, total reasonably assured resources (RAR) in the cost category up to $30 was reduced to 426,000 tonnes U_3O_8, down from 585,000 tonnes in 1980. The Nuexco estimate of RAR at the market level of $25 per pound indicated a further reduction to 317,000 tonnes, representing a decrease of 46 percent from the $30 per pound U_3O_8 listed in the January 1, 1980 estimate by DOE.

As anticipated in Report 155, total RAR has been further downgraded as a result of declining market values. Nuexco now estimates that RAR available at the present market level of $23.50 totals approximately 298,000 tonnes U_3O_8. The reduction of 19,000 tonnes since July 1981 represents a six percent loss in RAR. However, while the market level has been stable at $23.50 per pound U_3O_8 for the past five months, forward costs for mine and mill operations have continued to escalate due to inflation. By applying a flat inflation rate of ten percent, RAR would be reduced to 266,000 tonnes, down 51,000 tonnes from Nuexco's July total of 317,000 tonnes.

RAR considered available to the uranium industry will continue to follow the pattern set by the market price trend. In terms of real dollars, further reductions are predictable in today's market environment, a situation that will continue to deter new exploration and development projects.

Exploration Activity

The highlight of 1981 US exploration activity was the January 13 announcement of Wyoming Fuel, a wholly-owned subsidiary of Kansas/Nebraska Natural Gas Co., that a "significant" uranium occurrence had been discovered near the town of Crawford in the extreme northwest corner of Nebraska. Mineralization occurs in the basal units of the White River Formation of the Tertiary Age. Wyoming Fuel owns a 50 percent interest in the 64,000 acre property; the remaining 50 percent is controlled by Ferret Exploration of Denver. The area of mineralization is referred to as the Crow Butte Project by the joint venture.

The announcement claimed that project activity was in a "very preliminary" phase. However, results of drilling indicated a potential ore reserve at more than 25 million pounds U_3O_8. At least 62 of the first 400 holes drilled in the prospect area showed important uranium mineralization at various thicknesses, grades and depth. In fact, 28 drill holes showed five feet or more of ore containing at least 0.10 percent uranium. A portion of the deposit is shallow enough to allow surface mining; the rest is deep enough to consider recovery by solution mining methods.

Evaluation of the deposit has continued throughout 1981. Several hundred additional holes were drilled within the ore zone to confirm ore grade, thickness and continuity. Results of the fill-in drilling are considered extremely successful. It is probable that by the end of the present evaluation phase, the reserve status will be upgraded in total pounds and reclassified into measured and indicated reserve categories. The next evaluation phase will include feasibility studies to determine the recovery method most suitable for the orebody, and timing of full-scale development.

The South Texas district remains the most active within the US for the second consecutive year. As of mid-December, 55 drill rigs were operating in the district, compared to six in the Grants Uranium Belt of

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New Mexico, and a total of 40 in all other districts. Rocky Mountain Energy is the most recent participant in the South Texas area, where 20 to 25 companies still compete for property position.

The main area of activity in South Texas extends from Karnes County in the north to the south line of Duval County. Exploration is concentrated on the up-dip and down-dip extension of ore-bearing fluvial channels that trend down to the coast, cutting the strike of the formations at right angles. There are at least eight known channels within the three county (Karnes, Live Oak and Duval) area, all of which have multiple mineralized zones, primarily in the Oakville and Catahoula formations. Almost all uranium production from the district (18,400 tonnes U_3O_8) has been mined from deposits occurring in the eight channels that developed in Tertiary rocks.

Exploration in South Texas is not restricted to the area described above. It is scattered from the Mexican border northeastward to the vicinity of Houston, approximately 350 miles. A few small ore occurrences have been discovered, and in some cases evaluation is continuing on a limited scale. The new discoveries are associated with fluvial channels or offshore bars, neither of which has been fully explored. Five to seven new channels have been discovered and the potential for additional channels is considered to be favorable, one reason for continued interest by exploration groups.

During mid-1981, Texaco Inc. acquired a three-year option on about 53,000 acres in the Powder River Basin, Wyoming. It is the company's first major uranium program in Wyoming. Previously, exploration was limited to Texas and one or two other states on a smaller scale. Several uranium occurrences had already been discovered on the Wyoming property prior to the Texaco option. It is assumed that Texaco will explore each deposit further as part of the total project evaluation.

Exploration is continuing for the third straight year in southern Virginia. Marline Uranium Corp., a subsidiary of Marline Oil Corp., Calgary, Alberta, Canada, has over 50,000 acres under lease for uranium exploration. Most of the acreage and exploration activity is in Pittsylvania County, but work is progressing in several other counties and in North Carolina as well. More than 150 holes have been drilled to an average depth of 600 feet in the vicinity of favorable Triassic basins. Marline reports that the project has favorable public support and exploration is continuing on an indefinite schedule.

Other US exploration projects are primarily concentrated in the general vicinity of existing major producing districts. While different projects have met with limited success, important discoveries of high-grade, large tonnage deposits have not been made. In lieu of making a high-grade discovery, a number of exploration groups are looking for uranium deposits which can be produced at competitive cost levels. Solution mining seems to offer such an opportunity and is another attraction of the South Texas district.

Development Activity

The February start of operations by Union Oil Co. at the Sweetwater Uranium Project in Wyoming climaxed a long development period. The project is the newest conventional production facility in the US and its start-up was a significant 1981 event. The mine and mill are designed to handle at least 3,000 tons of ore per day making it one of the largest operations in Wyoming at this time.

In August, the start-up of an in situ leach operation in the same general area was announced by Ogle Petroluem Inc. Ogle is scheduled to recover 300,000 to 400,000 pounds U_3O_8 annually from its Bison Basin operation. Western Fuel, Inc., a subsidiary of Duke Power Co. of Charlotte, North Carolina owns a 50 percent interest in the project.

Several new recovery centers were completed in the South Texas district, including Tenneco's 200,000 pound per year West Cole plant in Webb County and Conoco Inc.'s 450,000 pound per year Trevino plant in neighboring Duval County. In another producing area, Freeport-McMoRan Inc. initiated production in May at a new uranium recovery facility near Donaldsonville, Louisiana. The plant is designed to recover 420,000 pounds U_3O_8 per year as a by-product of phosphoric acid.

Another positive 1981 uranium development was the approval by the state of Colorado of Homestake Mining Co.'s application for a reclamation permit to build a 600 ton per day uranium mill at its Pitch Project near Gunnison, Colorado. According to the February announcement, the mill is scheduled to begin operating in late 1982.

Following in March, was the announcement that Conoco had applied to the New Mexico state Engineer for permission to appropriate underground water for a proposed 1,300 ton per day uranium mill to be located near Prewitt. The mill feed is to be mined from a depth of 2,200 feet at Crownpount, 22 miles north of the mill. The project is jointly owned by Conoco and Wyoming

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Mineral Corp., a subsidiary of Westinghouse Electric Corp.

Both the Homestake and Conoco projects were postponed a few weeks after the original announcements had been made. In fact, many announcements of project postponements, curtailments or cancellations were forthcoming from every quarter of the industry. The most important events having an impact on the US uranium industry are listed chronologically in Table 14.

A number of similar events have affected the smaller mine operators with more devastating consequences. Less than ten companies are currently operating in the Utah/Colorado area of the Colorado Plateau where about 150 were active two years ago. Overall, new mine and mill development programs are on hold or have been postponed indefinitely in response to the current U_3O_8 supply/demand situation. In all probability, the attitude of potential developers will remain the same unless favorable changes occur in the supply/demand area. Nuexco anticipates that US production will continue to decline during the next few years with an annual total of about 20 million pounds U_3O_8 by 1984 (Report 158, Table 1).

Table 14

1981 US URANIUM DEVELOPMENTS

Date	Company	Event
1/81	Western Nuclear, Inc.	Reduced production by 40 percent at the Split Rock mill near Jeffrey City, Wyoming.
1/81	Conoco, Inc./Pioneer Nuclear Corp.	Cut back 50 percent of Conquista mine and mill operations near Falls City, Texas.
1/81	Cotter Corp.	Cut back one-third on milling operations at Canon City, Colorado; the Schwartzwalder mine in Colorado and two Utah mines to continue operating.
2/81	Federal American Partners	Shut down Gas Hills, Wyoming mining operations. Mill to continue to run on stockpiled ore.
3/81	Union Carbide Corp.	Closed Uravan mill in southwest Colorado for at least six months. Curtailed mine operations at all mines in district.
3/81	Conoco, Inc./Wyoming Mineral Corp.	Stopped development work at Crown Point mine.
3/81	Wyoming Mineral Corp.	Will close Irigaray, Wyoming in-situ mining project indefinitely.
3/81	Cotter Corp.	Suspending development of JD7 mine in Colorado.
4/81	Cleveland Cliffs Iron Co.	Postponed the construction of a commercial mine and mill at Pumpkin Buttes, Wyoming.
4/81	Exxon Nuclear Corp.	Cut back Highland mill production by one-third; open pit operations cut to one half annual rate with underground mine to be phased out by early 1982.
4/81	Pioneer Uravan, Inc.	Closing four of five small Colorado Plateau mines; seeking permits for 1,000 ton per day mill near Slick Rock, Colorado.

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RAW MATERIALS

4/81	Homestake Mining Co.	Indefinitely delaying construction of 600 ton per day mill at the Pitch mine; will phase down open pit operations from three to one shift per day.
5/81	Sohio Western Mining Co.	Closed Seboyeta, New Mexico mill.
6/81	Sohio Western Mining Co.	Announced closing of Seboyeta mine.
6/81	Western Nuclear, Inc.	Will close the Split Rock mill; 30,000 pounds U_3O_8 will be recovered annually from mine discharge water; mines put on standby.
6/81	Wyoming Mineral Corp.	Placed all Wyoming operations on standby.
6/81	Ranchers Exploration Corp.	Closed the Hope mine in Ambrosia Lake district.
7/81	Phillips Petroleum Co.	Nose Rock project put on standby.
7/81	Conoco, Inc./Pioneer Nuclear Corp.	Complete shutdown of Conquista project in early 1982.
7/81	Petrotomics (Getty Oil Co.)	Will cut production at Shirley Basin by 50 percent to 750 tons U_3O_8 per year.
8/81	Amoco Minerals Co.	Suspended all uranium exploration.
9/81	Homestake Mining Co.	Cut back its Grants mill operation by one-third; closed one mine.
9/81	Union Carbide Corp.	Uravan mill to start operation and continue six months.
9/81	Federal American Partners	Closed the mill at Gas Hills, Wyoming.
10/81	Rio Algom Corp.	Reduced production at its Lisbon, Utah project by 50 percent.
10/81	Anaconda Co.	Will cease all mining and milling operations in the Grants, New Mexico district by 3/82.
10/81	Wyoming Mineral Corp.	All uranium properties put up for sale.
11/81	Ranchers Exploration Corp.	May close the Jonny M mine in Ambrosia Lake, New Mexico by 6/82.
12/81	Gulf Mineral Resource Co.	Will cut back on Mt. Taylor, New Mexico production by about 20 percent.
12/81	Pathfinder Mines Corp.	Negotiating to sell 80 percent of Gas Hills, Wyoming operation to Cogema of France.
12/81	Plateau Resources	To start up Shootering Canyon mill in spring of 1982.

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STATISTICAL DATA

EXCHANGE VALUE $23.50/lb. U_3O_8
Determined as of December 31, 1981

Definition

The Exchange Value is Nuexco's judgment of the price at which transactions for significant quantities of natural uranium concentrates could be concluded as of the last day of the month.

Derivation

Nuexco bases the Exchange Value upon:

A. Data from recently completed transactions.
B. Data from pending transactions.
C. Firm bids to buy and firm offers to sell.
D. Prices purchasers have expressed a willingness to pay, but for which Nuexco is not aware of firm bids to buy, and prices sellers have expressed a willingness to accept, but for which Nuexco is not aware of firm offers to sell.

Comments

Nuexco does not consider the following in determining the Exchange Value:

A. The price of uranium delivered or to be delivered under old contracts.
B. The price of uranium delivered in connection with contract renegotiations or other than arm's length transactions.

TRANSACTION VALUE
Determined as of December 31, 1981

$/lb. U_3O_8	Millions of Pounds	Number of Transactions	Number of Months
24.00	2.5	18	4

Definition

The Transaction Value is a weighted average price of recent transactions, and is based on prices paid for U_3O_8 in transactions closed within the previous three-month period and for which delivery was scheduled within one year of the transaction date. At least ten transactions totaling at least two million pounds U_3O_8 are included in each calculation, or the sample time is extended as necessary to include these minima. Foreign currencies are converted to US dollars as of the transaction date.

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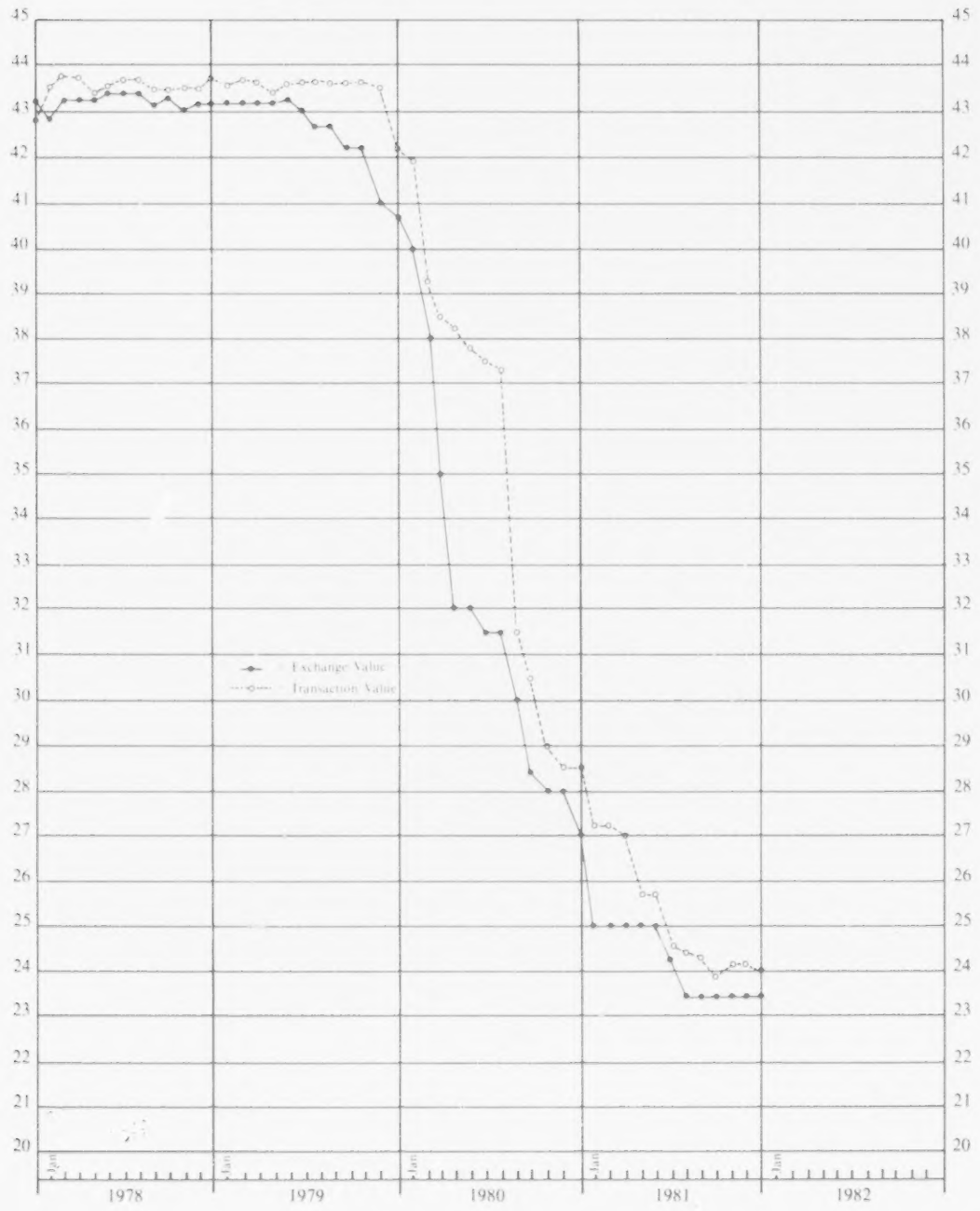
STATISTICAL DATA

EXCHANGE AND TRANSACTION VALUES SINCE JANUARY 1978

Determined as of the last day of the month indicated



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STATISTICAL DATA

HISTORICAL EXCHANGE VALUES

Determined as of the last day of the month indicated (US Dollars/lb. U_3O_8)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1968	—	—	—	—	—	—	—	6.35	6.35	6.40	6.45	6.50
1969	—	6.35	6.10	6.10	6.25	6.25	6.20	6.20	6.15	6.15	6.15	6.20
1970	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.20	6.15	6.15	6.15	6.15
1971	6.20	6.20	6.20	6.20	6.15	6.05	6.00	5.95	5.95	5.95	5.95	5.95
1972	5.95	5.95	5.95	5.95	5.95	5.95	5.95	5.95	5.95	5.95	5.95	5.95
1973	5.95	6.00	6.10	6.20	6.45	6.50	6.50	6.50	6.50	6.50	6.75	7.00
1974	7.70	7.90	8.00	9.00	9.50	10.50	11.50	12.00	12.50	14.00	14.75	15.00
1975	16.00	16.00	18.00	20.00	21.00	23.00	24.70	26.00	26.00	28.50	30.00	35.00
1976	35.20	37.00	39.25	40.00	40.00	40.00	40.00	40.40	41.00	41.00	41.50	41.00
1977	41.35	41.50	41.60	41.60	42.00	42.25	42.25	42.25	42.40	42.75	43.20	43.20
1978	42.90	43.25	43.25	43.25	43.40	43.40	43.40	43.10	43.25	43.00	43.25	43.25
1979	43.25	43.25	43.25	43.25	43.25	43.00	42.70	42.70	42.20	42.20	41.00	40.75
1980	40.00	38.00	35.00	32.00	32.00	31.50	31.50	30.00	28.50	28.00	28.00	27.00
1981	25.00	25.00	25.00	25.00	25.00	24.25	23.50	23.50	23.50	23.50	23.50	23.50

HISTORICAL TRANSACTION VALUES

Determined as of the last day of the month indicated (US Dollars/lb. U_3O_8)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1976	—	—	—	—	39.60	39.70	39.70	40.40	40.30	40.60	40.70	40.70
1977	41.30	41.30	41.40	41.50	42.80	42.90	43.00	42.60	42.50	42.80	42.90	42.90
1978	43.10	43.30	43.70	43.60	43.60	43.20	43.30	43.40	43.40	43.60	43.40	43.70
1979	43.60	43.80	43.70	43.40	43.60	43.70	43.70	43.60	43.60	43.60	43.50	42.30
1980	42.00	39.30	38.60	38.40	37.90	37.60	37.30	31.60	30.60	29.00	28.70	27.70
1981	27.20	27.20	27.00	25.70	25.70	24.50	24.40	24.30	23.90	24.10	24.10	24.00

EXCHANGE VALUE EXPRESSED IN SELECTED PRODUCER & CONSUMER CURRENCIES*

Country	per lb. U_3O_8 in Concentrates	per kg U_3O_8 in Concentrates	per kg U in Concentrates
US (dollar)	23.50	51.81	61.09
France (franc)	134.36	296.22	349.31
FRG (mark)	52.81	116.42	137.29
Japan (yen)	5,160	11,376	13,416
Switzerland (franc)	42.30	93.26	109.98
UK (pound)	12.29	27.10	31.95
Australia (dollar)	20.82	45.91	54.14
Canada (dollar)	27.85	61.40	72.40
Niger, Gabon (CFA)	6,714	14,802	17,456
South Africa (rand)	22.60	49.82	58.74
Sweden (kröner)	130.92	288.63	340.36

*Calculated using currency exchange rates published in the Wall Street Journal on the last business day of the month.

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STATISTICAL DATA

TRANSACTION VALUE

Determined as of the last day of the month indicated
(US Dollars/lb. U_3O_8)

Definition

The Transaction Value is a weighted average price of recent transactions, and is based on prices paid for U_3O_8 in transactions closed within the previous three-month period and for which delivery was scheduled within one year of the transaction date. At least ten transactions totaling at least two million pounds U_3O_8 are included in each calculation, or the sample time is extended as necessary to include these minima. Foreign currencies are converted to US dollars as of the transaction date.

Month	Report No.	$/lb. U_3O_8	Millions of Pounds	Number of Transactions	Number of Months
1976					
May	094	39.60	2.1	16	3
June	095	39.70	2.6	17	3
July	096	39.70	2.1	11	3
August	097	40.40	2.2	10	3
September	098	40.30	2.2	10	3
October	099	40.60	2.3	10	3
November	100	40.70	2.1	12	3
December	101	40.70	2.3	14	4
1977					
January	102	41.30	2.0	12	3
February	103	41.30	2.3	15	4
March	104	41.40	2.1	16	4
April	105	41.50	2.0	15	5
May	106	42.80	2.7	11	3
June	107	42.90	2.8	13	3
July	108	43.00	2.7	13	3
August	109	42.60	2.0	11	3
September	110	42.50	2.4	12	4
October	111	42.80	2.1	11	4
November	112	42.90	2.1	11	5
December	113	42.90	2.0	11	6
1978					
January	114	43.10	2.3	10	6
February	115	43.30	2.2	10	5
March	116	43.70	3.1	13	3
April	117	43.60	3.3	14	3
May	118	43.60	3.5	13	3
June	119	43.20	2.4	10	3
July	120	43.30	2.8	10	4
August	121	43.40	2.7	10	4
September	122	43.40	2.8	11	5
October	123	43.60	2.7	11	6
November	124	43.40	2.1	13	4
December	125	43.70	2.3	14	3

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STATISTICAL DATA

1979					
January	126	43.60	3.4	17	3
February	127	43.80	2.5	10	3
March	128	43.70	3.1	11	4
April	129	43.40	2.2	10	4
May	130	43.60	3.2	12	5
June	131	43.70	2.1	11	4
July	132	43.70	2.1	12	3
August	133	43.60	2.5	14	4
September	134	43.60	2.5	15	5
October	135	43.60	2.5	15	6
November	136	43.50	2.7	17	7
December	137	42.30	2.1	13	6
1980					
January	138	42.00	2.3	14	7
February	139	39.30	4.0	12	3
March	140	38.60	3.6	11	3
April	141	38.40	3.6	13	3
May	142	37.90	3.9	14	4
June	143	37.60	4.1	17	5
July	144	37.30	4.3	19	6
August	145	31.60	2.4	17	5
September	146	30.60	2.0	15	4
October	147	29.00	3.2	14	3
November	148	28.70	2.9	16	4
December	149	27.70	2.7	10	4
1981					
January	150	27.20	3.1	10	4
February	151	27.20	3.1	10	5
March	152	27.00	3.3	11	6
April	153	25.70	2.9	11	6
May	154	25.70	2.9	12	7
June	155	24.50	2.9	10	6
July	156	24.40	2.9	10	5
August	157	24.30	2.6	10	5
September	158	23.90	2.8	11	4
October	159	24.10	2.1	10	3
November	160	24.10	2.1	10	3
December	161	24.00	2.5	18	4

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STATISTICAL DATA

CONVERSION VALUE $1.20/lb. U as UF_6
Determined as of December 31, 1981

Definition

The Conversion Value is Nuexco's judgment of the price at which spot and/or near term transactions for significant quantities of conversion services could be concluded in the secondary market as of the last day of the month.

Derivation

Nuexco bases the Conversion Value upon:
A. Data from recently completed transactions.
B. Data from pending transactions.
C. Firm bids to buy and firm offers to sell.
D. Prices purchasers have expressed a willingness to pay, but for which Nuexco is not aware of firm bids to buy, and prices sellers have expressed a willingness to accept, but for which Nuexco is not aware of firm offers to sell.

Comments

Nuexco does not consider the following in determining the Conversion Value:
A. The price of conversion services delivered or to be delivered under old contracts.
B. The price of conversion services delivered in connection with contract renegotiations or other than arm's length transactions.

LOAN USE CHARGE RATE 6%
Determined as of December 31, 1981

Definition

The Loan Use Charge Rate is Nuexco's judgment of the annual interest rate at which uranium loans could be concluded as of the last day of the month.

Derivation

Nuexco bases the Loan Use Charge Rate upon:
A. Data from recently completed or pending loan transactions.
B. Rates included in firm proposals to borrow or lend.
C. Rates that potential borrowers and lenders have expressed as a willingness to pay or accept, but for which Nuexco is not aware of firm proposals.

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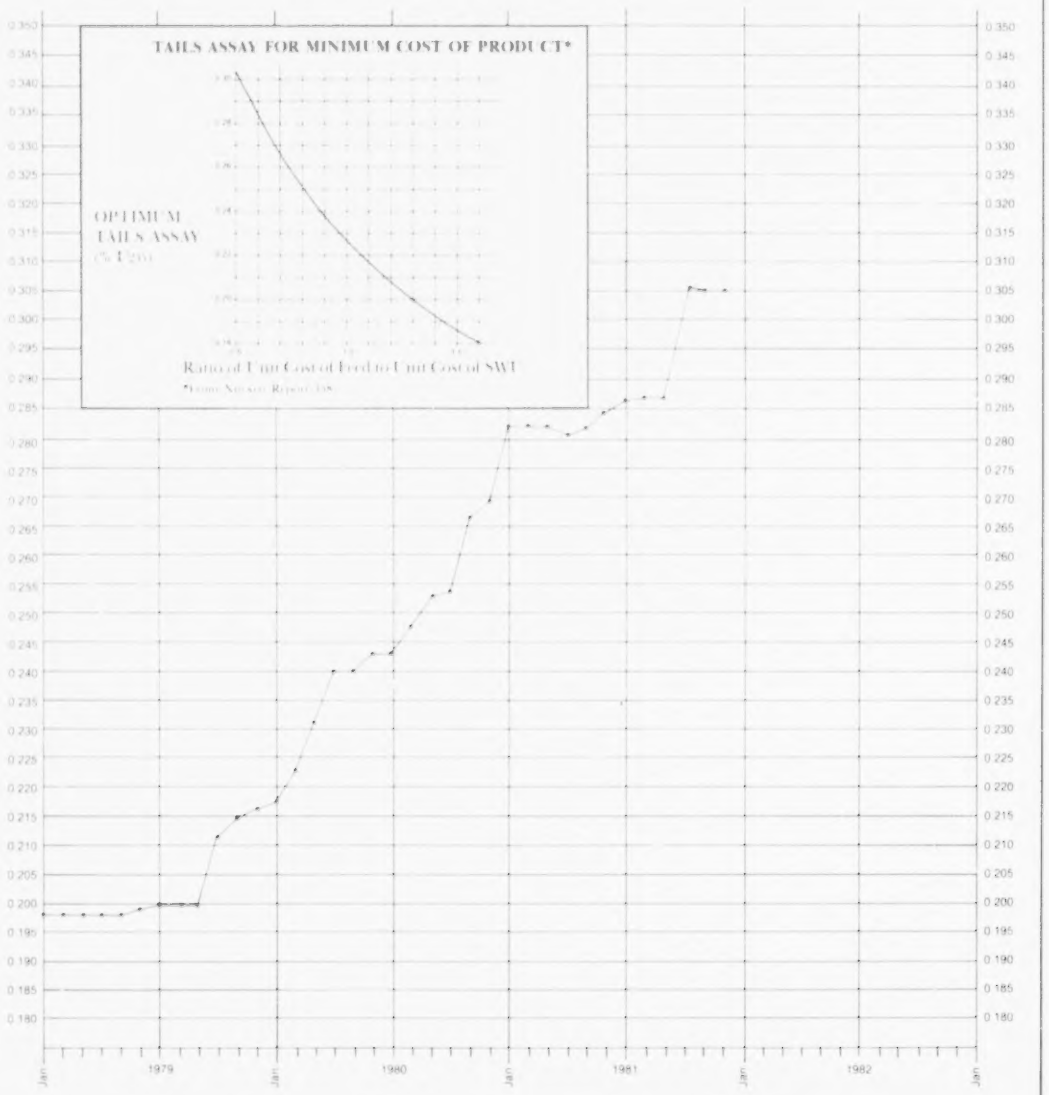
STATISTICAL DATA

OPTIMUM TAILS ASSAY

The optimum tails assay is the tails composition at which the cost of enriched uranium is lowest for given costs of separative work (SWU) and natural uranium feed. It depends only on the ratio of the cost of a kilogram of natural uranium in the form of UF_6 to the cost of a kilogram unit of separative work. Holders of US Department of Energy (USDOE) Adjustable Fixed Commitment (AFC) enrichment contracts have the option to specify, within limits, the transaction tails assay. The transaction tails assay for USDOE Requirements contracts is 0.2 percent U_{235}. For every one-hundredth of one percent increase in the transaction tails assay, natural uranium consumption increases about two percent.

OPTIMUM TAILS ASSAY[1]



[1]Based on Exchange Value and USDOE AFC SWU price; interpolated to the nearest thousandth.

STATISTICAL DATA

US GOVERNMENT STATISTICS

	Producer Price Index—Industrial Commodities (1967 = 100)[1]	Producer Price Index—All Commodities (1967 = 100)[1]	Consumer Price Index (1967 = 100)[2]	GNP Implicit Price Deflator (1972 = 100)[3]	Gross Average Hourly Earnings of Production or Non-supervisory Workers (USS)[4]			
					Metal Mining (SIC 10)	Primary Non-ferrous Metals (SIC 333)	Chemicals and Allied Products (SIC 28)	Electric and Electronic Equipment (SIC 36)
Annual Avg. 1970[5]	110.0	110.4	116.3	91.36	3.88	3.87	3.69	3.28
Annual Avg. 1971[5]	114.1	114.0	121.3	96.02	4.12	4.15	3.97	3.49
Annual Avg. 1972[5]	117.9	119.1	125.3	100.00	4.56	4.59	4.26	3.71
Annual Avg. 1973[5]	125.9	134.7	133.1	105.80	4.84	4.98	4.51	3.91
Annual Avg. 1974[5]	153.8	160.1	147.7	116.02	5.44	5.63	4.88	4.21
Annual Avg. 1975[5]	171.5	174.9	161.2	127.15	6.13	6.24	5.39	4.64
Annual Avg. 1976[5]	182.4	183.0	170.5	133.71	6.76	6.87	5.91	4.96
Annual Avg. 1977[5]	195.1	194.2	181.5	141.70	7.28	7.67	6.43	5.39
Annual Avg. 1978[5]	209.4	209.3	195.4	152.05	8.23	8.56	7.02	5.82
Annual Avg. 1979[5]	236.5	235.6	217.4	165.46	9.27	9.50	7.60	6.32
Annual Avg. 1980[5]	274.8	268.8	246.8	177.36	10.27	10.63	8.30	6.95
Jan 1981	291.5	284.8	260.5		10.91	11.31	8.74	7.41
Feb 1981	295.7	287.6	263.2		11.15	11.36	8.80	7.43
Mar 1981	299.6	290.3	265.1	188.14	11.13	11.50	8.84	7.47
Apr 1981	303.5	293.4	266.8		11.30	11.63	8.94	7.51
May 1981	304.7	294.1	269.0		11.26	11.68	8.99	7.55
Jun 1981	305.1	294.8	271.3	191.06	11.31	11.88	9.07	7.50R
Jul 1981	306.2R	296.2R	274.4		11.61	12.19	9.16	7.69
Aug 1981	307.0P	296.2P	276.5		11.85	12.09	9.19	7.76
Sep 1981	307.2P	295.5P	279.3	195.61R	12.11P	12.68R	9.38	7.79
Oct 1981	308.8P	296.0P	279.9		12.12P	12.46P	9.34P	7.84P
Nov 1981	309.1P	295.5P	280.7				9.34P	7.87P

P = Preliminary R = Revised since last month

[1]US Bureau of Labor Statistics, Washington, D.C.; "Producer Prices and Price Indexes," Table 6 (formerly "Wholesale Prices and Price Indexes"). Producer Price Indexes are revised four months after they are first released to reflect the availability of late reports and corrections by respondents.

[2]US Bureau of Labor Statistics, Washington, D.C.; Consumer Price Index for All Urban Consumers, US City Average, All Items.

[3]US Department of Commerce, Washington, D.C.; Bureau of Economic Analysis, National Income and Wealth Division; "Survey of Current Business," Table A. The GNP Implicit Price Deflator is published quarterly, and seasonally adjusted.

[4]US Bureau of Labor Statistics, Washington, D.C.; "Employment and Earnings," Table C-2. All data based on 1972 revision of SIC Manual. Data for 1970-1976 are adjusted to the March 1977 benchmark. Data for 1977-1978 are adjusted to the March 1979 benchmark. Data for January 1979 and beyond are adjusted to the March 1980 benchmark.

[5]Monthly data 1970-1978 for Producer Price Index-Industrial Commodities, Consumer Price Index, and Employment and Earnings SIC codes 10, 333, and 28, and quarterly data for GNMP Implicit Price Deflator appear on pages 4.6-4.8 of Nuexco Report 139.
Monthly data 1977-1978 for Employment and Earnings SIC Codes 10, 333, and 28 appear on page 33 of Nuexco Report 147.
Monthly data 1970-1978 for Employment and Earnings SIC Code 36 appear on page 23 of Nuexco Report 154.
Monthly data 1979-1980 for Employment and Earnings, Revised Establishment Data, all listed codes, appear on page 22 of Nuexco Report 158.
Monthly data 1977-1980 for Producer Price Index-All Commodities, appear on page 21 of Nuexco Report 158.

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STATISTICAL DATA

AUSTRALIAN GGVERNMENT STATISTICS

	Price Index of Materials Used in Manufacturing Industry—All Groups (Year 1968-69 = 100.0)[1]	Weighted Average Minimum Weekly Wage Rates—Adult Males Australia Mining and Quarrying (A$)[2]
Annual Avg. 1970[3]	101.4	59.88
Annual Avg. 1971[3]	101.5	65.95
Annual Avg. 1972[3]	105.6	71.26
Annual Avg. 1973[3]	124.4	78.96
Annual Avg. 1974[3]	141.9	108.07
Annual Avg. 1975[3]	150.4	132.55
Annual Avg. 1976[3]	168.4	160.93
Annual Avg. 1977[3]	192.0	179.03
Annual Avg. 1978[3]	198.5	190.04
Annual Avg. 1979	248.8	196.34
Annual Avg. 1980	321.8	218.01R
Aug 1980	352.0	220.08
Sep 1980	350.3	219.60
Oct 1980	348.2	221.13
Nov 1980	350.4	221.50
Dec 1980	351.7	222.41R
Jan 1981	357.8	230.58R
Feb 1981	356.6	230.41R
Mar 1981	355.2	229.66R
Apr 1981	354.6	229.38R
May 1981	353.4	237.31R
Jun 1981	360.4	237.62R
Jul 1981	357.5	237.48R
Aug 1981	360.3	237.48R
Sep 1981	357.8	237.45P
Oct 1981	352.0P	238.73P

P = Preliminary R = Revised since last month

[1]Australian Bureau of Statistics, Canberra: "Price Index of Materials Used in Manufacturing Industry" (Catalogue No. 6411.0), Table 3.
[2]Australian Bureau of Statistics, Canberra: "Wage Rates, Australia" (Catalogue No. 6312.0), Table 1. Figures for the latest fourteen months shown are subject to revision.
[3]Monthly data for 1970 through 1978 appear on pages 4.7 and 4.8 of Nuexco Report 138.

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STATISTICAL DATA

CANADIAN GOVERNMENT STATISTICS

	Industry Selling Price Index: Manufacturing (D 500000)[1, 2] (1971 = 100.0)	Wage-earner Data: Average Hourly Earnings (CS)[3, 4]		
		Metal Mining, including milling (SIC 050-059)	Primary Metal Industries, non-ferrous (SIC 296-298)	Chemicals and Chemical Products (SIC 370-379)
Annual Avg. 1977	174.3	8.18	6.50	6.51
Annual Avg. 1978	190.4	8.76	6.82	6.97
Annual Avg. 1979	217.9	9.60	7.35	7.67
Annual Avg. 1980	247.2	10.59	8.05	8.50
Aug 1980	249.4	10.58	8.14	8.65
Sep 1980	252.0	10.85	8.24	8.71
Oct 1980	256.0	11.05	8.28	8.82
Nov 1980	257.8	11.11	8.38	8.77
Dec 1980	258.4	11.13	8.32	8.92
Jan 1981	263.3	11.27	8.51	8.90
Feb 1981	263.7	11.43	8.59	9.00
Mar 1981	265.5R	11.47	8.63	9.17
Apr 1981	267.9R	11.73	8.76	9.33
May 1981	269.9R	11.80	8.90	9.49
Jun 1981	272.2R	11.80	9.16R	9.57R
Jul 1981	274.2R	11.92	9.20	9.62R
Aug 1981	276.0R	11.82P	9.16P	9.64P
Sep 1981	276.6R	12.39P	9.24P	9.82P
Oct 1981	278.3P			

P = Preliminary R = Revised since last month

[1]Statistics Canada, Prices Division, Ottawa: "Industry Price Indexes" (Catalogue 62-011), Table 1. Indexes for the most recent six months shown are subject to revision.

[2]Monthly data for 1973 through 1978 appear on page 4.10 of Nuexco Report 138.

[3]Statistics Canada, Labour Division, Employment and Payrolls Section, Ottawa: "Employment, Earnings and Hours" (Catalogue 72-002), Table 2.

[4]Monthly data for 1977 and 1978 appear on page 4.11 of Nuexco Report 138.

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STATISTICAL DATA

REPUBLIC OF SOUTH AFRICA STATISTICS

	Average Declared Working Costs per Metric Ton of Gold Ore Milled (Rand)[1]	Consumer Price Index[2] (1975 = 100, except where otherwise indicated)	Wholesale Price Index All Groups (1975 = 100)	Total Employment in Mining and Quarrying (Code 35)[5]	Total Salaries and Wages in Mining and Quarrying (1,000 Rand) (Code 40)[5]
Annual Avg. 1970[3]	7.34	100.3[4]		655,346	399,164
Annual Avg. 1971[3]	7.88	106.4[4]	59.1	652,294	415,956
Annual Avg. 1972[3]	8.79	113.3[4]	63.9	623,067	443,933
Annual Avg. 1973[3]	10.51	124.1[4]	72.3	684,743	572,133
Annual Avg. 1974[3]	13.18	138.5[4]	85.3	674,140	761,596
Annual Avg. 1975[3]	16.71	157.2[4]	100.0	639,473	1,003,617
Annual Avg. 1976[3]	19.30	174.7[4]	115.1	671,240	1,212,983
Annual Avg. 1977[3] [6]	23.87	194.4[4]	130.0	712,006	1,420,670
Annual Avg. 1978[3] [6]	27.14	137.2	142.7	664,571	1,537,169
Annual Avg. 1979[3] [6]	30.18	155.3	164.5	692,209	1,830,632
Annual Avg. 1980[6]	35.53	176.7	192.1	714,379	2,279,615
Jul 1980		177.2	192.7	715,460	202,403
Aug 1980		179.2	196.8	716,486	206,514
Sep 1980	36.19	182.8	199.8	710,889	204,761
Oct 1980		186.3	203.1	720,246	204,602
Nov 1980		187.8	205.6	716,797	208,345
Dec 1980	37.69	189.9	206.5	705,087	211,829
Jan 1981		191.0	207.2	729,575	219,969
Feb 1981		193.8	209.8	725,647	210,275
Mar 1981	39.26	195.2	209.9	705,010	210,151
Apr 1981		196.4	211.6	719,674	217,124
May 1981		197.7	213.2	726,869	219,880
Jun 1981	40.41	200.0	215.3	728,506	237,049
Jul 1981		204.6	218.4	735,839	249,080
Aug 1981		208.0	222.6	722,684	245,817
Sep 1981	43.28		227.0	760,788	273,880
Oct 1981					

[1]Chamber of Mines of South Africa, Johannesburg: "Analysis of Working Results," published quarterly.
[2]Republic of South Africa Department of Statistics, Pretoria: "Government Gazette: Consumer Price Index for Urban Areas."
[3]Historical data for the Average Declared Working Costs and Consumer Price Index 1970-1979 appear on page 4.9 of Nuexco Report 140.
[4]April 1970 = 100.00.
[5]Bulletin of Statistics, Department of Statistics, Pretoria.
[6]Historical data for Codes 35 and 40 1977-1980 appear on page 28 of Nuexco Report 157.

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STANDARD ABBREVIATIONS

ACTU:	Australian Council of Trade Unions
AEB:	Atomic Energy Board (South Africa)
AEC:	Atomic Energy Commission (US) (predecessor of NRC and DOE)
AECB:	Atomic Energy Control Board (Canada)
AFC:	Adjustable fixed commitment (swu contract)
AFR:	Away from reactor
AFUDC:	Allowance for Funds Used During Construction
AGR:	advanced gas-cooled reactor
BLWR:	same as BWR
BNFL:	British Nuclear Fuels, Ltd. (UK)
BWR:	boiling water reactor
CEA:	Commissariat a l'Energie Atomique (France)
CEGB:	Central Electricity Generating Board (UK)
CNEA:	Comision National de la Energia Atomica (Argentina)
COMINAK:	Compagnie des Mines d'Akouta (Republic of Niger)
DOE:	Department of Energy (US)
EEC:	European Economic Community
EIA:	Energy Information Agency (US)
EMR:	Department of Energy Mines & Resources (Canada)
ENEL:	Ente Nationale per l'Energie Elettrica
ENUSA:	Empresa Nacional del Uranio S.A. (Spain)
ERA:	Energy Resources of Australia
ESCOM:	Electricity Supply Commission (South Africa)
EdF:	Electricite de France
FBFC:	Societe Franco-Belge de Fabrications de Combustibles
FBR:	Fast breeder reactor
FRG:	Federal Republic of Germany
GCHWR:	gas-cooled heavy-water moderated reactor
GCR:	gas-cooled reactor
GNP:	Gross National Product
HTGR:	high-temperature gas-cooled reactor
HWLWR:	heavy water moderated boiling light-water-cooled reactor
IAEA:	International Atomic Energy Agency
INFCE:	International Nuclear Fuel Cycle Evaluation
JAURD:	Japan-Australia Uranium Resource Development Co.
JEN:	Junta de Energia Nuclear (Spain)
LGR:	light-water cooled graphite-moderated reactor
LMFBR:	liquid metal fast breeder reactor
LTFC:	Long-term fixed commitment (swu contract)
LWBR:	light-water breeder reactor
LWCHW:	light-water-cooled heavy-water-moderated reactor
MITI:	Ministry of International Trade and Industry (Japan)
MMN:	Metallurgie et Mecanique Nucleaires
MWe:	Megawatts of electricity
NAPOCOR:	National Power Corporation (Philippines)
NNPA:	Nuclear Non-proliferation Act (US)
NPT:	Treaty on Non-Proliferation of Nuclear Weapons
NRC:	Nuclear Regulatory Commission (US)
NSSS:	Nuclear Steam Supply System
NUFCOR:	Nuclear Fuels Corporation of South Africa Ltd.
OURD:	Overseas Uranium Resources Development Co., Ltd.
PHWR:	pressurized heavy-water-moderated and cooled reactor
PNC:	Power Reactor and Nuclear Fuel Development Corporation (Japan)
PSC:	Public Service Commission
PUC:	Public Utility Commission (US)
PWR:	pressurized water reactor
RAR:	Reasonably assured resources
RTZ:	Rio Tinto-Zinc Corporation Ltd. (UK)
SMDC:	Saskatchewan Mining Development Corporation (Canada)
SOMAIR:	Societe des Mines de l'Air
SSPB:	Swedish State Power Board
SWU:	Separative Work Unit
THTR:	thorium high-temperature reactor
TMI:	Three Mile Island (US)
TVA:	Tennessee Valley Authority (US)
UEGA:	Uranium Enrichment Group of Australia
UK:	United Kingdom
URDC:	Uranium Resources Development Corp. (Japan)
USBLS:	United States Bureau of Labor Statistics
VTAO:	Variable tails option (swu contract)
WOCA:	World outside communist areas

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EXECUTIVE SUMMARY
NUEXCO REPORT 161

1981 In Review

The 1981 uranium market and the year's important events are highlighted in this month's year end review.

Exchange Value Remains at $23.50

The **Exchange Value** as of December 31, 1981 is $23.50 per pound U_3O_8, unchanged from the five previous months. Although early December saw a continued price firming, new weakness developed towards month end. Several transactions involving a total of nearly two million pounds U_3O_8 are under discussion at prices near the current Exchange Value.

Near Term Supply and Demand Still at Two To One Ratio

As indicated in the *Market Data* section, the total of material available for sale in the near term is about 8.8 million pounds U_3O_8 equivalent. The total of demand in the same time frame is about 4.2 million pounds U_3O_8 equivalent.

Transaction Value Decreases Ten Cents to $24.00; Nine Uranium Sales Reported

This month's **Transaction Value** includes eighteen transactions totaling 2.5 million pounds U_3O_8 and covering four months. Nine uranium sales and one uranium loan transaction are reported this month. Seven of the nine sales are for relatively small quantities and all are for spot or near term delivery.

Conversion Value $1.20, Unchanged

The **Conversion Value** remained at $1.20 per pound U as UF_6. No conversion transactions are reported this month. The secondary conversion market was relatively quiet in December as it has been over recent months.

Canada Signs New Safeguards Agreements

New nuclear safeguards agreements were signed during December between Canada and both the EEC and Sweden. The agreements give advance consent to reprocessing of Canadian origin uranium on a general rather than case-by-case basis.

WPPSS Files Anti-Trust Suit

The failure to resolve a contract dispute between Washington Public Power Supply System and Western Nuclear, Inc. has resulted in WPPSS filing an anti-trust suit against Western Nuclear. The contract in question was signed in 1975 and involves 5.5 million pounds U_3O_8.

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